CHAPTER 33-24-05
STANDARDS FOR TREATMENT, STORAGE, AND DISPOSAL FACILITIES AND FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

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33-24-05-1169 [Reserved]

33-24-05-01. Purpose, scope, and applicability.

1. The purpose of this chapter is to establish minimum standards which define the acceptable management of hazardous waste.

2. The standards in this chapter apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste, except as specifically provided otherwise in this chapter or chapter 33-24-02.

3. The requirements of this chapter apply to a person disposing of hazardous waste by means of underground injection subject to a permit issued under an underground injection control program approved or promulgated under the Safe Drinking Water Act only to the extent they are required by chapter 33-24-06.

4. The requirements of this chapter apply to the owner or operator of a publicly owned treatment works which treats, stores, or disposes of hazardous waste only to the extent they are included in a hazardous waste permit by rule granted to such a person under chapter 33-24-06.

5. The requirements of this chapter apply to recyclable materials used in a manner constituting disposal, hazardous waste burned for energy recovery, recyclable materials utilized for precious metal recovery, and spent lead acid batteries being reclaimed.

6. The requirements of this chapter do not apply to:

   a. The owner or operator of a facility permitted, licensed, or registered by the department to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under section 33-24-02-05.

   b. The owner or operator of a facility managing recyclable materials described in subdivisions b, c, and d of subsection 1 of section 33-24-02-06 (except to the extent they are referred to in sections 33-24-05-600 through 33-24-05-689 or sections 33-24-05-201 through 33-24-05-209, sections 33-24-05-230 through 33-24-05-249, or sections 33-24-05-525 through 33-24-05-549).

   c. A generator accumulating waste onsite in compliance with section 33-24-03-12.

   d. A farmer disposing of pesticide containers from the farmer's own use in compliance with section 33-24-03-40.

e. The owner or operator of a totally enclosed treatment facility, as defined in section 33-24-01-04.

f. The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in section 33-24-01-04, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 high total organic carbon subcategory defined in section 33-24-05-280, table treatment standards for hazardous wastes, or reactive (D003) waste, to remove the characteristic before land disposal, the owner or operator must comply with the requirements set out in subsection 2 of section 33-24-05-08.

g. Immediate response activities.

(1) Except as provided in paragraph 2, a person engaged in treatment or containment activities during immediate response to any of the following situations:

(a) A discharge of hazardous waste.

(b) An imminent and substantial threat of a discharge of hazardous waste.

(c) A discharge of material which, when discharged, becomes a hazardous waste.

(d) An immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of military munitions, other explosive material, or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in section 33-24-01-04.

(2) An owner or operator of a facility otherwise regulated by this chapter shall comply with all applicable requirements of sections 33-24-05-15 through 33-24-05-36.

(3) Any person who is covered by paragraph 1 and continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this chapter and chapters 33-24-06 and 33-24-07.

(4) In the case of an explosives or munitions emergency response, if a federal, state, tribal, or local official acting within the scope of that person's official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste by transporters who do not have identification numbers and without the preparation of a manifest. In the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit must retain records for three years identifying the dates of the response, the responsible persons responding, the type and description of material addressed, and its disposition.

h. A transporter storing manifested shipments of hazardous waste in containers meeting the requirements of section 33-24-03-08 at a transfer facility for a period of ten days or less.

i. The addition of absorbent material to waste in a container (as defined in section 33-24-01-04) or the addition of waste to absorbent material in a container provided that these actions occur at the time waste is first placed in a container and subsection 2 of section 33-24-05-08 and sections 33-24-05-90 and 33-24-05-91 are complied with.

j. Universal waste handlers and universal waste transporters (as defined in section 33-24-01-04) handling the wastes listed below. These handlers are subject to regulation under sections 33-24-05-700 through 33-24-05-799, when handling the below listed universal wastes:

(1) Batteries as described in section 33-24-05-702;

(2) Pesticides as described in section 33-24-05-703;

(3) Mercury containing equipment as described in section 33-24-05-704; and

(4) Lamps as described in section 33-24-05-705.

7. The requirements of this chapter apply to owners or operators of all facilities which treat, store, or dispose of hazardous wastes referred to in sections 33-24-05-250 through 33-24-05-299.

8. Subsection 1 of section 33-24-05-09 applies only to facilities subject to regulation under sections 33-24-05-89 through 33-24-05-190 and sections 33-24-05-300 through 33-24-05-309.

9. Section 33-24-05-825 identifies when the requirements of this chapter apply to the storage of military munitions classified as solid waste under section 33-24-05-822. The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in article 33-24.

10. The requirements of sections 33-24-05-02 through 33-24-05-36 and section 33-24-05-58 do not apply to remediation waste management sites. (However, some remediation waste management sites may be a part of a facility that is subject to a traditional hazardous waste permit because the facility is also treating, storing, or disposing of hazardous wastes that are not remediation wastes. In these cases, sections 33-24-05-02 through 33-24-05-36 and section 33-24-05-58 do apply to the facility subject to the traditional hazardous waste permit.) Instead of the requirements of sections 33-24-05-02 through 33-24-05-36, owners or operators of remediation waste management sites must:

a. Obtain an identification number by applying to the department using environmental protection agency form 8700-12, or equivalent state form;

b. Obtain a detailed chemical and physical analysis of a representative sample of the hazardous remediation wastes to be managed a the site. At a minimum, the analysis must contain all of the information which must be known to treat, store, or dispose of the waste according to chapter 33-24-05, and must be kept accurate and up to date;

c. Prevent people who are unaware of the danger from entering, and minimize the possibility for unauthorized people or livestock to enter onto the active portion of the remediation waste management site, unless the owner or operator can demonstrate to the department that:

(1) Physical contact with the waste, structures, or equipment within the active portion of the remediation waste management site will not injure people or livestock who may enter the active portion of the remediation waste management site; and

(2) Disturbance of the waste or equipment by people or livestock who enter onto the active portion of the remediation waste management site will not cause a violation of the requirements of this article;

d. Inspect the remediation waste management site for malfunctions, deterioration, operator errors, and discharges that may be causing, or may lead to, a release of hazardous

waste constituents to the environment, or a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment, and must remedy the problem before it leads to a human health or environmental hazard. If a hazard is imminent or has already occurred, the owner or operator must take remedial action immediately;

e. Provide personnel with classroom or on-the-job training on how to perform their duties in a way that ensures the remediation waste management site complies with the requirements of sections 33-24-05-01 through 33-24-05-190, 3-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819, and on how to respond effectively to emergencies;

f. Take precautions to prevent accidental ignition or reaction of ignitable or reactive waste, and prevent threats to human health and the environment from ignitable, reactive, and incompatible waste;

g. For remediation waste management sites subject to regulation under sections 33-24-05-89 through 33-24-05-190 and sections 33-24-05-300 through 33-24-05-309, the owner or operator must design, construct, operate, and maintain a unit within a one hundred-year floodplain to prevent washout of any hazardous waste by a one hundred-year flood, unless the owner or operator can meet the demonstration of subsection 1 of section 33-24-05-09;

h. Not place any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, or underground mine or cave;

i. Develop and maintain a construction quality assurance program for all surface impoundments, waste piles, and landfill units that are required to comply with subsections 3 and 4 of section 33-24-05-119, subsections 2 and 3 of section 33-24-05-131, and subsections 3 and 4 of section 33-24-05-177 at the remediation waste management site, according to the requirements of section 33-24-05-10;

j. Develop and maintain procedures to prevent accidents and a contingency and emergency plan to control accidents that occur. These procedures must address proper design, construction, maintenance, and operation of remediation waste management units at the site. The goal of the plan must be to minimize the possibility of, and the hazards from a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment. The plan must explain specifically how to treat, store, and dispose of the hazardous remediation waste in question, and must be implemented immediately whenever a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment;

k. Designate at least one employee, either on the facility premises or on call (that is, available to respond to an emergency by reaching the facility quickly), to coordinate all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan;

l. Develop, maintain, and implement a plan to meet the requirements in subdivisions b through f, i, and j; and

m. Maintain records documenting compliance with subdivisions a through l.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-02. Identification number and permit.

Every facility owner or operator shall apply to the department for an identification number and a permit. The department may assess and collect reasonable fees for the review and issuance of permits.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03, 23-20.3-05.1
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05, 23-20.3-05.1

33-24-05-03. Required notices.

1. The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source shall notify the department and the environmental protection agency in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required. The owner or operator of a recovery facility that has arranged to receive hazardous waste subject to sections 33-24-03-50 through 33-24-03-59 must provide a copy of the movement document bearing all required signatures to the foreign exporter; to the office of enforcement and compliance assurance, office of federal activities, international compliance assurance division (2254A), environmental protection agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460; the state; and to the competent authorities of all other countries concerned within three working days of receipt of the shipment. The original of the signed movement document must be maintained at the facility for at least three years. In addition, such owner or operator shall, as soon as possible, but no later than thirty days after the completion of recovery and no later than one calendar year following the receipt of the hazardous waste, send a certificate of recovery to the foreign exporter; to the competent authority of the country of export; to the environmental protection agency's office of enforcement and compliance assurance at the above address, and the state, by mail, email without a digital signature followed by mail, or fax followed by mail.

2. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the postclosure care period, the owner or operator shall notify the new owner or operator in writing of the requirements in this chapter and chapter 33-24-06.

3. The owner or operator of a facility that receives hazardous waste from an offsite source (except where the owner or operator is also the generator) shall inform the generator in writing that the owner or operator has the appropriate permit for, and will accept, the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-04. General waste analysis.

1. Waste analysis requirements.

   a. Before an owner or operator treats, stores, or disposes of any hazardous wastes, the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis must contain all the

information which must be known to treat, store, or dispose of the waste in accordance with the requirements of this chapter or a permit issued under chapter 33-24-06.

b. The analysis may include data developed under chapter 33-24-02 and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes. (Comment: For example, the facility's records of analyses performed on the waste before the effective date of these rules, or studies conducted on hazardous wastes generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with subdivision a. The owner or operator of an offsite facility may arrange for the generator of the hazardous waste to supply part of the information required by subdivision a, except as otherwise specified in subsections 2 and 3 of section 33-24-05-256. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this section.)

c. The analysis must be repeated as necessary to ensure that it is accurate and up-to-date. At a minimum, the analysis must be repeated:

(1) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

(2) For offsite facilities when the results of the inspection required in subdivision d indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

d. The owner or operator of an offsite facility shall inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

2. The owner or operator shall develop and follow a written waste analysis plan which describes the procedures which the owner or operator will carry out to comply with subsection 1. The owner or operator must keep this plan at the facility. At a minimum, the plan must specify:

a. The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters, i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with subsection 1.

b. The test methods which will be used to test for these parameters.

c. The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(1) One of the sampling methods described in appendix I of chapter 33-24-02; or

(2) An equivalent sampling method.

d. The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date.

e. For offsite facilities the waste analysis that hazardous waste generators have agreed to supply.

f. Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in sections 33-24-05-08, 33-24-05-145, 33-24-05-183, 33-24-05-256, subsection 4 of section 33-24-05-404, subsection 4 of section 33-24-05-433, and section 33-24-05-453.

g. For surface impoundments exempted from land disposal restrictions under subsection 1 of section 33-24-05-253, the procedures and schedules for:

(1) The sampling of impoundment contents;

(2) The analyses of test data; and

(3) The annual removal of residues which are not delisted under section 33-24-01-08 or which exhibit a characteristic of hazardous waste and either:

(a) Do not meet applicable treatment standards of sections 33-24-05-280 through 33-24-05-289; or

(b) Where no treatment standards have been established:

[1] Such residues are prohibited from land disposal under section 33-24-05-272 or Resource Conservation and Recovery Act section 3004(b); or

[2] Such residues are prohibited from land disposal under subsection 6 of section 33-24-05-273.

h. For owners and operators seeking an exemption to the air emission standards of sections 33-24-05-450 through 33-24-05-474 in accordance with section 33-24-05-452:

(1) If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.

(2) If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from offsite, that is used as the basis for knowledge of the waste.

3. For offsite facilities, the waste analysis plan required in subsection 2 must also specify the procedures which will be used to inspect and analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:

a. The procedures which will be used to determine the identity of each movement of waste managed at the facility.

b. The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

c. The procedures that the owner or operator of an offsite landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-05. Security.

1. The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the owner's or operator's facility, unless the owner or operator can demonstrate to the department that:

   a. Physical contact with the waste, structures, or equipment with the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of the facility.

   b. Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this chapter.

2. Unless exempt under subdivisions a and b of subsection 1, the facility must have:

   a. A twenty-four-hour surveillance system, for example, television monitoring or surveillance by guards or facility personnel, which continuously monitors and controls entry onto the active portion of the facility; or

   b. Both of the following:

      (1) An artificial or natural barrier, for example, a fence in good repair or a fence combined with a cliff, which completely surrounds the active portion of the facility.

      (2) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility, for example, an attendant, television monitors, locked entrance, or controlled roadway access to the facility.

3. Unless exempt under subdivisions a and b of subsection 1, a sign with a legend, "Danger - Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion, and must be legible from a distance of at least twenty-five feet [7.62 meters]. The legend must be written in English and in any other language predominant in the area surrounding the facility. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

History: Effective January 1, 1984; amended effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-06. General inspection requirements.

1. The owner or operator shall inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to release of hazardous waste constituents to the environment, or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

2. Schedule requirements.

   a. The owner or operator shall develop and follow a written schedule for inspecting all monitoring equipment, safety, and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

b. The owner or operator shall keep this schedule at the facility.

c. The schedule must identify the types of problems, for example, malfunctions or deterioration, which are to be looked for during the inspection, for example, inoperative sump pump, leaking fitting, eroding dike, etc.

d. The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in sections 33-24-05-93, 33-24-05-106, 33-24-05-108, 33-24-05-120, 33-24-05-132, 33-24-05-150, 33-24-05-165, 33-24-05-178, 33-24-05-302, 33-24-05-403, 33-24-05-422, 33-24-05-423, 33-24-05-428, and 33-24-05-453 through 33-24-05-459, where applicable.

3. The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

4. The owner or operator shall record inspections in an inspection log or summary. The owner or operator shall keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-07. Personnel training.

1. Initial training requirements.

a. Facility personnel shall successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of these rules. The owner or operator shall ensure that this program includes all the elements described in the document required under subdivision c of subsection 4.

b. This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures, including contingency plan implementation, relevant to the positions in which they are employed.

c. At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(1) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment.

(2) Key parameters for automatic waste feed cutoff systems.

(3) Communications or alarm systems.

(4) Response to fires or explosions.

(5) Response to ground water contamination incidents.

(6) Shutdown of operations.

d. For facility employees that receive emergency response training pursuant to occupational safety and health administration regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training pursuant to this section, provided that the overall facility training meets all the requirements of this section.

2. Facility personnel shall successfully complete the program required in subsection 1 within six months after January 1, 1984, or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after January 1, 1984, may not work in unsupervised positions until they have completed the training requirements of subsection 1.

3. Facility personnel shall take part in an annual review of the initial training required in subsection 1.

4. The owner or operator shall maintain the following documents and records at the facility:

a. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job.

b. A written job description for each position listed under subdivision a. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications and duties of facility personnel assigned to each position.

c. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under subdivision a.

d. Records that document that the training or job experience required under subsections 1, 2, and 3 has been given to, and completed by, facility personnel.

5. Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-08. General requirements for ignitable, reactive, or incompatible wastes.

1. The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including, but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (for example, from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flames to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive wastes.

2. Where specifically required by other sections of this chapter, the owner or operator of a facility that treats, stores, or disposes ignitable or reactive waste, or mixes incompatible wastes, or incompatible wastes and other materials, must take precautions to prevent reactions which:

   a. Generate extreme heat or pressure, fire or explosion, or violent reaction;

   b. Produce uncontrolled toxic mists, fumes, dust, or gases in sufficient quantity to threaten human health or the environment;

   c. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

   d. Damage the structural integrity of the device or facility; or

   e. Through other like means threaten human health or the environment.

3. When required to comply with subsection 1 or 2, the owner or operator shall document that compliance. This documentation may be based on references to published scientific or engineering literature data, from trial tests (for example, bench scale or pilot scale tests), waste analysis (as specified in section 33-24-05-04), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

History: Effective January 1, 1984; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-09. Location standards.

1. The department will not issue a permit to any facility which is or will be constructed in a location with a geology, hydrogeology, hydrology, or topography which the department reasonably believes is incompatible with the type of hazardous waste management activity occurring or proposed to occur. Locations which are specifically within the meaning of this section include but are not limited to floodplains, ground water recharge areas, highly permeable soils, high ground water tables, and areas of high topographic relief.

2. The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine, or cave is prohibited.

History: Effective January 1, 1984; amended effective October 1, 1986.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-10. Construction quality assurance program.

1. **Construction quality assurance program.**

   a. A construction quality assurance program is required for all surface impoundment, waste pile, and landfill units that are required to comply with subsections 3 and 4 of section 33-24-05-119, subsections 2 and 3 of section 33-24-05-131, and subsections 3 and 4 of section 33-24-05-177. The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a construction quality assurance officer who is a registered professional engineer.

   b. The construction quality assurance program must address the following physical components, where applicable:

      (1) Foundations;

(2) Dikes;

(3) Low-permeability soil liners;

(4) Geomembranes (flexible membrane liners);

(5) Leachate collection and removal systems and leak detection systems; and

(6) Final cover systems.

2. **Written construction quality assurance plan.** The owner or operator of units subject to the construction quality assurance program under subsection 1 must develop and implement a written construction quality assurance plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The construction quality assurance plan must include:

   a. Identification of applicable units and a description of how they will be constructed.

   b. Identification of key personnel in the development and implementation of the construction quality assurance plan and construction quality assurance officer qualifications.

   c. A description of inspection and sampling activities for all unit components identified in subdivision b of subsection 1, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under section 33-24-05-40.

3. **Contents of program.**

   a. The construction quality assurance program must include observations, inspections, tests, and measurements sufficient to ensure:

      (1) Structural stability and integrity of all components of the unit identified in subdivision b of subsection 1;

      (2) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (for example, pipes) according to design specifications; and

      (3) Conformity of all materials used with design and other material specifications under sections 33-24-05-119, 33-24-05-131, and 33-24-05-177.

   b. The construction quality assurance program must include test fills for compacted soil liners, using the same compaction methods as in the full scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of subparagraph b of paragraph 1 of subdivision a of subsection 3 of section 33-24-05-119, subparagraph b of paragraph 1 of subdivision a of subsection 2 of section 33-24-05-131, and subparagraph b of paragraph 1 of subdivision a of subsection 3 of section 33-24-05-177 in the field. Compliance with the hydraulic conductivity requirements must be verified by using in situ testing on the constructed test fill. The department may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of subparagraph b of paragraph 1 of subdivision a of subsection 3 of section 33-24-05-119, subparagraph b of

paragraph 1 of subdivision a of subsection 2 of section 33-24-05-131, and subparagraph b of paragraph 1 of subdivision a of subsection 3 of section 33-24-05-177 in the field.

4. **Certification.** Waste shall not be received in a unit subject to section 33-24-05-10 until the owner or operator has submitted to the department by certified mail or hand delivery a certification signed by the construction quality assurance officer that the approved construction quality assurance plan has been successfully carried out and that the unit meets the requirements of subsection 3 or 4 of section 33-24-05-119, subsection 2or 3 of section 33-24-05-131, or subsection 3 or 4 of section 33-24-05-177; and the procedure in paragraph 2 of subdivision b of subsection 12 of section 33-24-06-04 has been completed. Documentation supporting the construction quality assurance officer's certification must be furnished to the department upon request.

History: Effective January 1, 1994; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-11. [Reserved]

33-24-05-12. [Reserved]

33-24-05-13. [Reserved]

33-24-05-14. [Reserved]

33-24-05-15. Design and operation of facility.

Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-16. Required equipment.

All facilities must be equipped with the following, unless it can be demonstrated to the department that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

1. An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.

2. A device, such as a telephone (immediately available at the scene of operations), or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams.

3. Portable fire extinguishers, fire control equipment, including special extinguishing equipment (such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment.

4. Water at adequate volume and pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-17. Testing and maintenance of equipment.

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary, to ensure its proper operation in time of emergency.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-18. Access to communications or alarm system.

1. Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required under section 33-24-05-16.

2. If there is ever just one employee on the premises while the facility is operating, the employee must have immediate access to a device, such as a telephone, immediately available at the scene of the operation, or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required under section 33-24-05-16.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-19. Required aisle space.

The owner or operator shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the department that aisle space is not needed for any of these purposes.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-20. Arrangements with local authorities.

1. The owner or operator shall attempt to make the following arrangements, as appropriate for the types of waste handled at the facility and the potential need for the services of these organizations:

   a. Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes.

   b. Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific

fire department and agreements with any others to provide support to the primary emergency authority.

c. Agreements with state emergency response teams, emergency response contractors, and equipment suppliers.

d. Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

2. Where state or local authorities decline to enter into such arrangements, the owner or operator shall document the refusal in the operating record.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-21. [Reserved]

33-24-05-22. [Reserved]

33-24-05-23. [Reserved]

33-24-05-24. [Reserved]

33-24-05-25. [Reserved]

33-24-05-26. Purpose and implementation of contingency plan.

1. Each owner or operator shall have a contingency plan for the facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

2. The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-27. Content of contingency plan.

1. The contingency plan must describe the actions facility personnel must take to comply with sections 33-24-05-26 and 33-24-05-31 in response to fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous constituents to air, soil, or surface water at the facility.

2. If the owner or operator has already prepared a spill prevention, control, and countermeasures plan in accordance with 40 CFR part 112, or some other emergency or contingency plan, the owner or operator need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with these requirements. The owner or operator may develop one contingency plan which meets all regulatory requirements. The department

recommends that the plan be based on the national response team's integrated contingency plan guidance ("one plan"). When modifications are made to nonhazardous waste provisions in an integrated contingency plan, the changes do not trigger the need for a hazardous waste permit modification.

3. The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services, pursuant to section 33-24-05-20.

4. The plan must list names, addresses, and telephone numbers (office and home) of all persons qualified to act as emergency coordinator and this list must be kept up to date. Where more than one is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

5. The plan must include a list of all emergency equipment at the facility, such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment, where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

6. The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signals to be used to begin evacuation, evacuation routes, and alternate evacuation routes, in cases where the primary routes could be blocked by releases of hazardous waste or fires.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-28. Copies of contingency plan.

A copy of the contingency plan and all revisions to the plan must be:

1. Maintained at the facility; and

2. Submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-29. Amendment of contingency plan.

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

1. The facility permit is revised;

2. The plan fails in an emergency;

3. The facility changes in its design, construction, operation, maintenance, or other circumstances, in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

4. The list of emergency coordinators changes;

5. The list of emergency equipment changes; or

6. Applicable regulations are revised.

History: Effective January 1, 1984; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-30. Emergency coordinator.

At all times, there must be at least one employee either on the facility premises or on call, i.e., available to respond to an emergency by reaching the facility within a short period of time, with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of wastes handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-31. Emergency procedures.

1. When there is an imminent or actual emergency situation, the emergency coordinator, or the coordinator's designee when the emergency coordinator is on call, shall immediately:

   a. Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel.

   b. Notify appropriate state or local agencies with designated response roles if their help is needed.

2. When there is a release, fire, or explosion, the emergency coordinator shall immediately identify the character, exact source, amount, and areal extent of any released materials. The emergency coordinator may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

3. Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion, for example, the effects of any toxic irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosions.

4. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, the emergency coordinator shall report the coordinator's findings as follows:

   a. If the coordinator's assessment indicates that evacuation of local areas may be advisable, the coordinator shall immediately notify appropriate local authorities. The coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

   b. The coordinator shall immediately notify either the government official designated as the on-scene coordinator for that geographical area or the national response center (using their twenty-four-hour toll-free number 800-424-8802). The report must include:

      (1) Name and telephone number of reporter.

(2) Name and address of facility.

(3) Time and type of incident, for example, release, fire.

(4) Name and quantity of materials involved, to the extent known.

(5) The extent of injuries, if any.

(6) The possible hazard to human health or the environment, outside the facility.

5. During an emergency, the emergency coordinator shall take all reasonable measures to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

6. If the facility stops operations in response to a fire, an explosion or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

7. Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

8. The emergency coordinator shall ensure that, in the affected areas of the facility:

   a. No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

   b. All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

9. The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen days after the incident, the owner or operator must submit a written report on the incident to the department. The report must include:

   a. Name, address, and telephone number of the owner or operator.

   b. Name, address, and telephone number of the facility.

   c. Date, time, and type of incident, for example, fire, explosion.

   d. Name and quantity of materials involved.

   e. The extent of injuries, if any.

   f. An assessment of actual or potential hazards to human health or the environment, where this is applicable.

   g. Estimated quantity and disposition of recovered material that resulted from the incident.

History: Effective January 1, 1984; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-32. [Reserved]

33-24-05-33. [Reserved]

33-24-05-34. [Reserved]

33-24-05-35. [Reserved]

33-24-05-36. [Reserved]

33-24-05-37. Applicability of manifest system, recordkeeping, and reporting requirements.

1. Sections 33-24-05-37 through 33-24-05-46 apply to owners and operators of both onsite and offsite facilities except as section 33-24-05-01 provides otherwise. Sections 33-24-05-38, 33-24-05-39, and 33-24-05-43 do not apply to owners and operators of onsite facilities that do not receive any hazardous waste from offsite sources, and to owners and operators of offsite facilities with respect to waste military munitions exempted from manifest requirements under subsection 1 of section 33-24-05-823. Subsection 2 of section 33-24-05-40 only applies to permittees who treat, store, or dispose of hazardous waste onsite where such wastes were generated.

2. The revised manifest form and procedures in sections 33-24-01-04, 33-24-02-07, 33-24-05-37, 33-24-05-38, 33-24-05-39, and 33-24-05-43, shall not apply until September 5, 2006, or article 33-24 is amended and effective, but not prior to September 5, 2006. The manifest form and procedures in sections 33-24-01-04, 33-24-02-07, 33-24-05-37, 33-24-05-38, 33-24-05-39, and 33-24-05-43, contained in article 33-24, amended December 1, 2003, shall be applicable until September 5, 2006, or when amended, but not prior to September 5, 2006.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-38. Use of manifest system.

1. If a facility receives:

   a. Hazardous waste accompanied by a manifest, the owner or operator, or the owner's or operator's agent shall sign and date the manifest as indicated in subdivision b to certify that the hazardous waste covered by the manifest was received, that the hazardous waste was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.

   b. A hazardous waste shipment accompanied by a manifest, the owner or operator, or the owner's or operator's agent, shall:

      (1) Sign and date, by hand, each copy of the manifest;

      (2) Note any discrepancies in the manifest, as defined in subsection 1 of section 33-24-05-39, on each copy of the manifest;

      (3) Immediately give the transporter at least one copy of the signed manifest;

      (4) Within thirty days after the delivery, send a copy (page 3) of the manifest to the generator;

      (5) Within thirty days of delivery, send the top copy (page 1) of the manifest to the e-manifest system for purposes of data entry and processing. In lieu of mailing this

copy to the environmental protection agency, the owner or operator may transmit to the environmental protection agency system an image file of page 1 of the manifest, or both a data string file and the image file corresponding to page 1 of the manifest. Any data or image files transmitted to the environmental protection agency under this paragraph must be submitted in data file and image file formats that are acceptable to the environmental protection agency and that are supported by the environmental protection agency's electronic reporting requirements and by the electronic manifest system; and

(6) Retain at the facility a copy of each manifest for at least three years from the date of delivery.

c. Hazardous waste imported from a foreign source, the receiving facility must mail a copy of the manifest and documentation confirming the environmental protection agency's consent to the import of hazardous waste to the department and to the following address within thirty days of delivery: office of enforcement and compliance assurance, office of federal activities, international compliance assurance division (2254A), environmental protection agency, 1200 Pennsylvania Avenue NW, Washington, D.C. 20460.

2. If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the identification numbers, generator's certification, and signatures), the owner or operator, or the owner's or operator's agent, shall:

a. Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the shipping paper was received;

b. Note any significant discrepancies (as defined in subsection 1 of section 33-24-05-39) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper;

c. Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received);

d. Within thirty days after the delivery, send a copy of the signed and dated manifest, or a signed and dated copy of the shipping paper (if the manifest has not been received within thirty days after delivery) to the generator; and

e. Retain at the facility a copy of each shipping paper (if signed in lieu of the manifest at the time of delivery) and manifest for at least three years from the date of delivery.

3. If a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of chapter 33-24-03.

4. Within three working days of the receipt of a shipment subject to sections 33-24-03-50 through 33-24-03-59, the owner or operator of the facility must provide a copy of the movement document bearing all required signatures to the exporter, to the office of enforcement and compliance assurance, office of federal activities, international compliance assurance division (2254A), environmental protection agency, 1200 Pennsylvania Avenue, Washington, D.C. 20460, the state, and to competent authorities of all other concerned countries. The original copy of the movement document must be maintained at the facility for at least three years from the date of signature.

5. A facility must determine whether the consignment state for a shipment regulates any additional wastes (beyond those regulated federally) as hazardous wastes under the state's

hazardous waste program. Facilities must also determine whether the consignment state or generator state requires the facility to submit any copies of the manifest to these states.

6. Legal equivalence to paper manifests. Electronic manifests that are obtained, completed, and transmitted in accordance with subdivision b of subsection 1 of section 33-24-03-04, and used in accordance with this section in lieu of the paper manifest form are the legal equivalent of paper manifest forms bearing handwritten signatures, and satisfy for all purposes any requirement in these rules to obtain, complete, sign, provide, use, or retain a manifest.

   a. Any requirement in these rules for the owner or operator of a facility to sign a manifest or manifest certification by hand, or to obtain a handwritten signature, is satisfied by signing with or obtaining a valid and enforceable electronic signature within the meaning of 40 CFR 262.25.

   b. Any requirement in these rules to give, provide, send, forward, or to return to another person a copy of the manifest is satisfied when a copy of an electronic manifest is transmitted to the other person.

   c. Any requirement in these rules for a manifest to accompany a hazardous waste shipment is satisfied when a copy of an electronic manifest is accessible during transportation and forwarded to the person or persons who are scheduled to receive delivery of the waste shipment.

   d. Any requirement in these rules for an owner or operator to keep or retain a copy of each manifest is satisfied by the retention of the facility's electronic manifest copies in its account on the e-manifest system, provided that such copies are readily available for viewing and production if requested by any environmental protection agency inspector or authorized department representative.

   e. No owner or operator may be held liable for the inability to produce an electronic manifest for inspection under this section if the owner or operator can demonstrate that the inability to produce the electronic manifest is due exclusively to a technical difficulty with the electronic manifest system for which the owner or operator bears no responsibility.

7. An owner or operator may participate in the electronic manifest system either by accessing the electronic manifest system from the owner's or operator's electronic equipment, or by accessing the electronic manifest system from portable equipment brought to the owner's or operator's site by the transporter who delivers the waste shipment to the facility.

8. Special procedures applicable to replacement manifests. If a facility receives hazardous waste that is accompanied by a paper replacement manifest for a manifest that was originated electronically, the following procedures apply to the delivery of the hazardous waste by the final transporter:

   a. Upon delivery of the hazardous waste to the designated facility, the owner or operator must sign and date each copy of the paper replacement manifest by hand in item 20 (designated facility certification of receipt) and note any discrepancies in item 18 (discrepancy indication space) of the paper replacement manifest;

   b. The owner or operator of the facility must give back to the final transporter one copy of the paper replacement manifest;

   c. Within thirty days of delivery of the waste to the designated facility, the owner or operator of the facility must send one signed and dated copy of the paper replacement manifest to the generator, and send an additional signed and dated copy of the paper replacement manifest to the electronic manifest system; and

d. The owner or operator of the facility must retain at the facility one copy of the paper replacement manifest for at least three years from the date of delivery.

9. Special procedures applicable to electronic signature methods undergoing tests. If an owner or operator using an electronic manifest signs this manifest electronically using an electronic signature method which is undergoing pilot or demonstration tests aimed at demonstrating the practicality or legal dependability of the signature method, then the owner or operator shall also sign with an ink signature the facility's certification of receipt or discrepancies on the printed copy of the manifest provided by the transporter. Upon executing its ink signature on this printed copy, the owner or operator shall retain this original copy among its records for at least three years from the date of delivery of the waste.

10. Imposition of user fee for electronic manifest use. An owner or operator who is a user of the electronic manifest format may be assessed a user fee by the environmental protection agency for the origination or processing of each electronic manifest. An owner or operator may also be assessed a user fee by the environmental protection agency for the collection and processing of paper manifest copies that owners or operators must submit to the electronic manifest system operator under paragraph 5 of subdivision b of subsection 1. The environmental protection agency shall maintain and update from time-to-time the schedule of electronic manifest system user fees, which shall be determined based on current and projected system costs and level of use of the electronic manifest system. The schedule of electronic manifest user fees shall be published by the environmental protection agency as an appendix to 40 CFR 262.

11. Electronic manifest signatures. Electronic manifest signatures shall meet the criteria described in 40 CFR 262.25.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-39. Manifest discrepancies.

1. Manifest discrepancies are:

   a. Significant differences (as defined by subsection 2) between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity and type of hazardous waste a facility actually receives;

   b. Rejected wastes, which may be a full or partial shipment of hazardous waste that the treatment, storage, or disposal facility cannot accept; or

   c. Container residues, which are residues that exceed the quantity limits for empty containers set forth in subsections 3, 4, and 5 of section 33-24-02-07.

2. Significant differences in quantity are: For bulk waste, variations greater than ten percent in weight; for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant differences in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

3. Upon discovering a significant difference in quantity or type, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (for example, with telephone conversations). If the discrepancy is not resolved within fifteen days after receiving the waste, the owner or operator must immediately submit to the department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

4. Rejected wastes or container residue.

   a. Upon rejecting waste or identifying a container residue that exceeds the quantity limits for empty containers set forth in subsections 3, 4, and 5 of section 33-24-02-07, the facility must consult with the generator prior to forwarding the waste to another facility that can manage the waste. If it is impossible to locate an alternative facility that can receive the waste, the facility may return the rejected waste or residue to the generator. The facility must send the waste to the alternative facility or to the generator within sixty days of the rejection or the container residue identification.

   b. While the facility is making arrangements for forwarding rejected wastes or residues to another facility under this section, the facility must ensure that either the delivering transporter retains custody of the waste, or the facility must provide for secure, temporary custody of the waste, pending delivery of the waste to the first transporter designated on the manifest prepared under subsection 5 or 6.

5. Except as provided in subdivision g, for full or partial load rejections and residues that are to be sent offsite to an alternate facility, the facility is required to prepare a new manifest in accordance with subsection 1 of section 33-24-03-04 and the following instructions:

   a. Write the generator's identification number in item 1 of the new manifest. Write the generator's name and mailing address in item 5 of the new manifest. If the mailing address is different from the generator's site address, then write the generator's site address in the designated space for item 5.

   b. Write the name of the alternate designated facility and the facility's identification number in the designated facility block (item 8) of the new manifest.

   c. Copy the manifest tracking number found in item 4 of the old manifest to the special handling and additional information block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

   d. Copy the manifest tracking number found in item 4 of the new manifest to the manifest reference number line in the discrepancy block of the old manifest (item 18a).

   e. Write the department of transportation description for the rejected load or the residue in item 9 (United States department of transportation description) of the new manifest and write the container types, quantity, and volume or volumes of waste.

   f. Sign the generator's or offeror's certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled, and is in proper condition for transportation, and mail a signed copy of the manifest to the generator identified in item 5 of the new manifest.

   g. For full load rejections that are made while the transporter remains present at the facility, the facility may forward the rejected shipment to the alternate facility by completing item 18b of the original manifest and supplying the information on the next destination facility in the alternate facility space. The facility must retain a copy of this manifest for the facility's records, and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest and comply with subdivisions a through f.

6. Except as provided in subdivision g, for rejected wastes and residues that must be sent back to the generator, the facility is required to prepare a new manifest in accordance with subsection 1 of section 33-24-03-04 and the following instructions:

a. Write the facility's identification number in item 1 of the new manifest. Write the facility's name and mailing address in item 5 of the new manifest. If the mailing address is different from the facility's site address, then write the facility's site address in the designated space for item 5 of the new manifest.

b. Write the name of the initial generator and the generator's identification number in the designated facility block (item 8) of the new manifest.

c. Copy the manifest tracking number found in item 4 of the old manifest to the special handling and additional information block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

d. Copy the manifest tracking number found in item 4 of the new manifest to the manifest reference number line in the discrepancy block of the old manifest (item 18a).

e. Write the department of transportation description for the rejected load or the residue in item 9 (United States department of transportation description) of the new manifest and write the container types, quantity, and volume or volumes of waste.

f. Sign the generator's or offeror's certification to certify, as offeror of the shipment, that the waste has been properly packaged, marked and labeled, and is in proper condition for transportation.

g. For full load rejections that are made while the transporter remains at the facility, the facility may return the shipment to the generator with the original manifest by completing items 18a and 18b of the manifest and supplying the generator's information in the alternate facility space. The facility must retain a copy for the facility's records and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest and comply with subdivisions a through f and h.

h. For full or partial load rejections and container residues contained in nonempty containers that are returned to the generator, the facility must also comply with the exception reporting requirements in subsections 1 and 2 of section 33-24-03-15.

7. If a facility rejects a waste or identifies a container residue that exceeds the quantity limits for empty containers set forth in subsections 3, 4, and 5 of section 33-24-02-07 after the facility has signed, dated, and returned a copy of the manifest to the delivering transporter or to the generator, the facility must amend its copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest. The facility must also copy the manifest tracking number from item 4 of the new manifest to the discrepancy space of the amended manifest, and must re-sign and date the manifest to certify to the information as amended. The facility must retain the amended manifest for at least three years from the date of amendment, and must within thirty days, send a copy of the amended manifest to the transporter and generator that received copies prior to the manifest being amended.

History: Effective January 1, 1984; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-40. Operating record.

1. The owner or operator shall keep a written operating record at the facility.

2. The following information must be recorded, as it becomes available, and maintained in the operating record for three years unless noted as follows:

a. A description and the quantity of each hazardous waste received and the methods and dates of its treatment, storage, or disposal at the facility as required by appendix I. This information must be maintained in the operating record until closure of the facility.

b. The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram that shows each cell or disposal area. For all facilities, this information must include cross-references to manifest document numbers if the waste was accompanied by a manifest. This information must be maintained in the operating record until closure of the facility.

c. Records and results of waste analysis and waste determinations performed as specified in sections 33-24-05-04, 33-24-05-08, 33-24-05-145, 33-24-05-183, subsection 1 of section 33-24-05-253, sections 33-24-05-256, 33-24-05-404, 33-24-05-433, and 33-24-05-453.

d. Summary reports and details of all incidents that require implementing the contingency plan as specified in subsection 10 of section 33-24-05-31.

e. Records and results of inspections as required by subsection 4 of section 33-24-05-06 (except these data need to be kept only three years).

f. Monitoring, testing, or analytical data, and corrective action where required by sections 33-24-05-47 through 33-24-05-58, sections 33-24-05-10, 33-24-05-104, 33-24-05-106, 33-24-05-108, 33-24-05-120, 33-24-05-126, 33-24-05-127, 33-24-05-132, 33-24-05-137, 33-24-05-138, 33-24-05-164, 33-24-05-165, 33-24-05-167, 33-24-05-178, 33-24-05-179, 33-24-05-187, 33-24-05-188, 33-24-05-302, subsections 3 through 6 of section 33-24-05-404, section 33-24-05-405, subsections 4 through 9 of section 33-24-05-433, section 33-24-05-434, and sections 33-24-05-452 through 33-24-05-460. Maintain in the operating record for three years, except for records and results pertaining to ground water monitoring and cleanup which must be maintained in the operating record until closure of the facility.

g. For offsite facilities, notices to generators as specified in subsection 2 of section 33-24-05-03.

h. All closure cost estimates under subsection 1 of section 33-24-05-76 and for disposal facilities, all postclosure cost estimates under subsection 2 of section 33-24-05-76. This information must be maintained in the operating record until closure of the facility.

i. A certification by the permittee no less often than annually that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that is generated to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.

j. Records of the quantities and date of placement for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to section 33-24-05-254, a petition pursuant to section 33-24-05-255, and the applicable notice required by a generator under subsection 1 of section 33-24-05-256. This information must be maintained in the operating record until closure of the facility.

k. For an offsite treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under section 33-24-05-256.

l. For an onsite treatment facility, the information contained in the notice except the manifest number, and the certification and demonstration, if applicable, required by the generator or the owner or operator under section 33-24-05-256.

m. For an offsite land disposal facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator of a treatment facility under section 33-24-05-256.

n. For an onsite land disposal facility, the information contained in the notice required by the generator or owner or operator of a treatment facility under section 33-24-05-256.

o. For an offsite storage facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under section 33-24-05-256.

p. For an onsite storage facility, the information contained in the notice except the manifest number, and the certification and demonstration, if applicable, required by the generator or the owner or operator under section 33-24-05-256.

q. Any records required under subdivision m of subsection 10 of section 33-24-05-01.

r. Monitoring, testing, or analytical data where required by section 33-24-05-150 must be maintained in the operating record for five years.

s. Certifications as required by subsection 6 of section 33-24-05-109 must be maintained in the operating record until closure of the facility.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-41. Availability, retention, and disposition of records.

1. All records, including plans, required under this chapter must be furnished upon request, and made available at all reasonable times for inspection, by a duly designated officer, employee, or representative of the department.

2. The retention period for all records is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the department.

3. A copy of records of waste disposal locations and quantities under subdivision b of subsection 2 of section 33-24-05-40 must be submitted to the department and local land authority upon closure of the facility.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-42. Biennial report.

The owner or operator shall prepare and submit a single copy of a biennial report to the department by March first of each even-numbered year. The report form and instructions can be obtained from the

department's division of waste management and special studies. The biennial report must cover facility activities during the previous calendar year and must include the following information:

1. The identification number, name, and address of the facility.

2. The calendar year covered by the report.

3. For offsite facilities, identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator.

4. A description and quantity of each hazardous waste the facility received during the year. For offsite facilities, this information must be listed by identification number of each generator.

5. The method of treatment, storage, or disposal for each hazardous waste.

6. Any ground water monitoring data which the owner or operator is required to collect under section 33-24-05-55, 33-24-05-56, or 33-24-05-57, and which the owner or operator has not otherwise submitted to the department under those sections.

7. The most recent closure and postclosure cost estimate under section 33-24-05-76.

8. For generators who treat, store, or dispose of hazardous waste onsite, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

9. For generators who treat, store, or dispose of hazardous waste onsite, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.

10. The certification signed by the owner or operator of the facility or the owner's or operator's authorized representative.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-43. Unmanifested waste report.

1. If a facility accepts for treatment, storage, or disposal any hazardous waste from an offsite source without an accompanying manifest, or without an accompanying shipping paper as described in subsection 5 of section 33-24-04-04 and if the waste is not excluded from the manifest requirement by this article, then the owner or operator shall prepare and submit a single copy of a report to the department within fifteen days after receiving the waste. The report must be designated "Unmanifested Waste Report" and must include the following information:

   a. The identification number, name, and address of the facility;

   b. The date the facility received the waste;

   c. The identification number, name, and address of the generator and the transporter, if available;

   d. A description and the quantity of each unmanifested hazardous waste the facility received;

   e. The method of treatment, storage, or disposal for each hazardous waste;

f. The certification signed by the owner or operator of the facility or the owner's or operator's authorized representative; and

g. A brief explanation of why the waste was unmanifested, if known.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-44. Additional reports.

In addition to submitting the biennial reports and unmanifested waste reports described in sections 33-24-05-42 and 33-24-05-43, the owner or operator shall also report to the department:

1. Releases, fires, and explosions as specified in subsection 10 of section 33-24-05-31.

2. Facility closures specified in section 33-24-05-64.

3. As otherwise required by sections 33-24-05-47 through 33-24-05-58, 33-24-05-118 through 33-24-05-143, 33-24-05-160 through 33-24-05-190, and 33-24-05-400 through 33-24-05-474.

History: Effective January 1, 1984; amended effective December 1, 1991; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-45. [Reserved]

33-24-05-46. [Reserved]

33-24-05-47. Applicability of releases from solid waste management units requirements.

1. Applicability.

   a. Except as provided in subsection 2, sections 33-24-05-47 through 33-24-05-58 apply to owners or operators of facilities that treat, store, or dispose of hazardous waste. The owner or operator must satisfy the requirements identified in subdivision b for all wastes (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at which waste was placed in such units.

   b. All solid waste management units must comply with the requirements in section 33-24-05-58. A surface impoundment, waste pile, and land treatment unit, or landfill that receives hazardous waste after July 26, 1982, (hereinafter referred to as a "regulated unit") must comply with the requirements of sections 33-24-05-48 through 33-24-05-57 in lieu of section 33-24-05-58 for purposes of detecting, characterizing, and responding to releases to the uppermost aquifer. The financial responsibility requirements of section 33-24-05-58 apply to regulated units.

2. The owner's or operator's regulated unit or units, are not subject to regulation for releases into the uppermost aquifer under sections 33-24-05-47 through 33-24-05-58 if:

   a. The owner or operator is exempted under section 33-24-05-01; or

   b. The owner or operator operates a unit which the department finds:

      (1) Is an engineered structure;

(2) Does not receive or contain liquid waste or waste containing free liquids;

(3) Is designed and operated to exclude liquid, precipitation, and other run-on and runoff;

(4) Has both inner and outer layers of containment enclosing the waste;

(5) Has a leak detection system built into each containment layer;

(6) The owner or operator will provide continuing operation and maintenance of these leak detection systems during the active life of the unit and the closure and postclosure care periods; and

(7) To a reasonable degree of certainty, will not allow hazardous constituents to migrate beyond the outer containment layer prior to the end of the postclosure care period.

c. The department finds, pursuant to subsection 4 of section 33-24-05-167, that the treatment zone of a land treatment unit that qualifies as a regulated unit does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of section 33-24-05-165 has not shown a statistically significant increase in hazardous constituents below the treatment zone during the operating life of the unit. An exemption under this subsection can only relieve an owner or operator of responsibility to meet the requirements of sections 33-24-05-47 through 33-24-05-58 during the postclosure care period;

d. The department finds that there is no potential for migration of liquid from a regulated unit to the uppermost aquifer during the active life of the regulated unit (including the closure period) and the postclosure care period specified under section 33-24-05-66. This demonstration must be certified by a qualified geologist or geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator shall base any predictions made under this subsection on assumptions that maximize the rate of liquid migration; or

e. The owner or operator designs and operates a pile in compliance with subsection 3 of section 33-24-05-130.

3. The requirements of sections 33-24-05-47 through 33-24-05-58 apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the requirements of sections 33-24-05-47 through 33-24-05-58:

a. Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;

b. Apply during the postclosure care period under section 33-24-05-66 if the owner or operator is conducting a detection monitoring program under section 33-24-05-55; or

c. Apply during the compliance period under section 33-24-05-53 if the owner or operator is conducting a compliance monitoring program under section 33-24-05-56 or a corrective action program under section 33-24-05-57.

4. Sections 33-24-05-47 through 33-24-05-58 may apply to miscellaneous units when necessary to comply with sections 33-24-05-301 through 33-24-05-303.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 2016.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-48. Required programs.

1. Owners and operators subject to the ground water protection requirements of sections 33-24-05-47 through 33-24-05-58 shall conduct a monitoring and response program as follows:

   a. Whenever hazardous constituents under section 33-24-05-50 from a regulated unit are detected at a compliance point under section 33-24-05-52, the owner or operator must institute a compliance monitoring program under section 33-24-05-56. Detected is defined as statistically significant evidence of contamination as described in subsection 6 of section 33-24-05-55;

   b. Whenever the ground water protection standard under section 33-24-05-49 is exceeded, the owner or operator must institute a corrective action program under section 33-24-05-57. Exceeded is defined as statistically significant evidence of increased contamination as described in subsection 4 of section 33-24-05-56;

   c. Whenever hazardous constituents under section 33-24-05-50 from a regulated unit exceed concentration limits under section 33-24-05-51 in ground water between the compliance point under section 33-24-05-52 and the downgradient facility boundary property, the owner or operator shall institute a corrective action program under section 33-24-05-57; or

   d. In all other cases, the owner or operator shall institute a detection monitoring program under section 33-24-05-55.

2. The department will specify in the facility permit the specific elements of the monitoring and response program. The department may include one or more of the programs identified in subsection 1 in the facility permit as may be necessary to protect human health and the environment and will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the department will consider the potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.

History: Effective January 1, 1984; amended effective December 1, 1991; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-49. Ground water protection standard.

The owner or operator must comply with conditions specified in the facility permit designed to ensure that hazardous constituents under section 33-24-05-50 detected in the ground water from a regulated unit do not exceed the concentration limits under section 33-24-05-51 in the uppermost aquifer underlying the waste management area beyond the point of compliance under section 33-24-05-52 during the compliance period under section 33-24-05-53. The department will establish this ground water protection standard in the facility permit when hazardous constituents have been detected in the ground water.

History: Effective January 1, 1984; amended effective December 1, 1991.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-50. Hazardous constituents.

1. The department will specify in the facility permit the hazardous constituents to which the ground water protection standard of section 33-24-05-49 applies. Hazardous constituents are constituents identified in appendix V of chapter 33-24-02 that have been detected in ground water in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the department has excluded them under subsection 2.

2. The department will exclude an appendix V of chapter 33-24-02 constituent from the list of hazardous constituents specified in the facility permit if the department finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the department will consider the following:

   a. Potential adverse effects on ground water quality, considering:

      (1) The physical and chemical characteristics of the waste in the regulated units, including its potential for migration.

      (2) The hydrogeological characteristics of the facility and surrounding land.

      (3) The quantity of ground water and the direction of ground water flow.

      (4) The proximity and withdrawal rates of ground water users.

      (5) The current and future uses of ground water in the area.

      (6) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality.

      (7) The potential for health risks caused by human exposure to waste constituents.

      (8) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

      (9) The persistence and permanence of the potential adverse effect.

   b. Potential adverse effects on hydraulically connected surface water quality, considering:

      (1) The volume and physical and chemical characteristics of the waste in the regulated unit.

      (2) The hydrogeological characteristics of the facility and surrounding land.

      (3) The quantity and quality of ground water, and the direction of ground water flow.

      (4) The patterns of rainfall in the region.

      (5) The proximity of the regulated unit to surface water.

      (6) The current and future uses of surface water in the area and any water quality standards established for those surface waters.

      (7) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality.

      (8) The potential for health risks caused by human exposure to waste constituents.

(9) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

(10) The persistence and permanence of the potential adverse effects.

3. In making any determination under subsection 2 about the use of ground water in the area around the facility, the department will consider any identification of underground sources of drinking water and exempted aquifers made under provisions of the Safe Drinking Water Act and 40 CFR 144.8.

History: Effective January 1, 1984; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-51. Concentration limits.

1. The department will specify in the facility permit concentration limits in the ground water for hazardous constituents established under section 33-24-05-50. The concentration of a hazardous constituent:

   a. May not exceed the background level of that constituent in the ground water at the time that limit is specified in the permit;

   b. For any of the constituents listed in table 1, may not exceed the respective value given in that table if the background level of the constituent is below the value given in table 1; or

   c. May not exceed an alternate limit established by the department under subsection 2.

Table 1. Maximum Concentration of Constituents for Ground Water Protection

Constituent	Maximum Concentration mg/l
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10, 10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,9a-octahydro-1, 4-endo, endo-5, 8-dimenthano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1-trichloro-2, 2-bis[p-methoxyphenyl] ethane)	0.1
Toxaphene ($C_{10}H_{10}Cl_8$ technical chlorinated camphene, 67-69% chlorine)	0.005
2,4-D (2,4-dichlorophenoxyacetic acid)	0.1
2,4,5-TP silvex (2,4,5-trichlorophen-oxy propionic acid)	0.01

2. The department will establish an alternate concentration limit for a hazardous constituent if the department finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the department will consider the following factors:

   a. Potential adverse effects on ground water quality, considering:

      (1) The physical and chemical characteristics of the waste in the regulated unit, including the potential for migration.

      (2) The hydrogeological characteristics of the facility and surrounding land.

      (3) The quantity of ground water and direction of ground water flow.

      (4) The proximity and withdrawal rates of ground water users.

      (5) Current and future uses of ground water in the area.

      (6) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality.

      (7) The potential for health risks caused by human exposure to waste constituents.

      (8) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

      (9) The persistence and permanence of potential adverse effects.

   b. Potential adverse effects on hydraulically connected surface water quality, considering:

      (1) The volume and physical and chemical characteristics of the waste in the regulated unit.

      (2) The hydrogeological characteristics of the facility and surrounding land.

      (3) The quantity and quality of ground water, and the direction of ground water flow.

      (4) The patterns of rainfall in the region.

      (5) The proximity of the regulated unit to surface waters.

      (6) The current and future uses of surface waters in the area and any water quality standards established for those surface waters.

      (7) Existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality.

      (8) The potential for health risks caused by human exposure to waste constituents.

      (9) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

      (10) The persistence and permanence of the potential adverse effects.

3. In making any determination under subsection 2 about the use of ground water in the area around the facility the department will consider any identification of underground sources of drinking water and exempted aquifers made under provisions of the Safe Drinking Water Act and 40 CFR 144.8.

History: Effective January 1, 1984; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-52. Point of compliance.

1. The department will specify in the facility permit the point of compliance at which the ground water protection standard of section 33-24-05-49 applies and at which monitoring must be conducted. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.

2. The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.

   a. The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

   b. If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-53. Compliance period.

1. The department will specify in the facility permit the compliance period during which the ground water protection standard of section 33-24-05-49 applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting, and the closure period).

2. The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of section 33-24-05-56.

3. If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in subsection 1, the compliance period is extended until the owner or operator can demonstrate that the ground water protection standard of section 33-24-05-49 has not been exceeded for a period of three consecutive years.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-54. General ground water monitoring requirements.

The owner or operator shall comply with the following requirements for any ground water monitoring program developed to satisfy section 33-24-05-55, 33-24-05-56, or 33-24-05-57:

1. The ground water monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depth to yield ground water samples from the uppermost aquifer that:

   a. Represent the quality of background ground water that has not been affected by leakage from a regulated unit. A determination of background ground water quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

(1) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; and

(2) Sampling at other wells will provide an indication of background ground water quality that is representative or more representative than that provided by the upgradient wells.

b. Represent the quality of ground water passing the point of compliance.

c. Allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the uppermost aquifer.

2. If a facility contains more than one regulated unit, separate ground water monitoring systems are not required for each regulated unit provided that provisions for sampling the ground water in the uppermost aquifer will enable detection and measurement at the compliance point of hazardous constituents from the regulated units that have entered the ground water in the uppermost aquifer.

3. All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well borehole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of ground water samples. The annular space, i.e., the space between the borehole and well casing, above the sampling depth must be sealed to prevent contamination of samples and the ground water.

4. The ground water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of ground water quality below the waste management area. At a minimum, the program must include procedures and techniques for:

a. Sample collection.

b. Sample preservation and shipment.

c. Analytical procedures.

d. Chain of custody control.

5. The ground water monitoring program must include sampling and analytical methods that are appropriate for ground water sampling and that accurately measure hazardous constituents in ground water samples.

6. The ground water monitoring program must include a determination of the ground water surface elevation each time ground water is sampled.

7. In detection monitoring or where appropriate in compliance monitoring, data on each hazardous constituent specified in the permit will be collected from background wells and wells at the compliance points the number and kinds of samples collected to establish background must be appropriate for the form of statistical test employed following generally accepted statistical principles. The sample site must be as large as necessary to ensure with reasonable confidence that a contaminant released to ground water from a facility will be detected. The owner or operator will determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility permit which must be specified in the unit permit upon approval by the department. This sampling procedure must be:

a. A sequence of at least four samples, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained, by reference to the

uppermost aquifers effective porosity, hydraulic conductivity, and hydraulic gradient, and the fate and transport characteristics of the potential contaminants; or

b. An alternate sampling procedure proposed by the owner or operator and approved by the department.

8. The owner or operator will specify one of the following statistical methods to be used in evaluating ground water monitoring data for each hazardous constituent which, upon approval by the department, will be specified in the unit permit. The statistical test chosen must be conducted separately for each hazardous constituent in each well. Where practical quantification limits are used in any of the following statistical procedures to comply with subdivision e of subsection 9, the practical quantification limits must be proposed by the owner or operator and approved by the department. Use of any of the following statistical methods must be protective of human health and the environment and must comply with the performance standards outlined in subsection 9.

   a. A parametric analysis of variance followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance wells mean and the background mean levels for each constituent.

   b. An analysis of variance based on ranks followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance wells median and the background median levels for each constituent.

   c. A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

   d. A control chart approach that gives control limits for each constituent.

   e. Another statistical test method submitted by the owner or operator and approved by the department.

9. Any statistical method chosen under subsection 8 for specification in the unit permit shall comply with the following performance standards, as appropriate:

   a. The statistical method used to evaluate ground water monitoring data must be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.

   b. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a ground water protection standard, the test must be done at a type one error level no less than one hundredth for each testing period. If a multiple comparisons procedure is used, the type one experiment wise error rate for each testing period must be no less than five hundredths; however, the type one error of no less than one hundredth for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

   c. If a control chart approach is used to evaluate ground water monitoring data, the specific type of control chart and its associated parameter values must be proposed by the owner

or operator and approved by the department if the department finds it to be protective of human health and the environment.

d. If a tolerance interval or a prediction interval is used to evaluate ground water monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, must be proposed by the owner or operator and approved by the department if the department finds these parameters to be protective of human health and the environment. These parameters will be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

e. The statistical method must account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantification limit approved by the department under subsection 8 that is used in the statistical method must be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

f. If necessary, the statistical method must include procedures to control or correct for seasonal and spacial variability as well as temporal correlation in the data.

10. Ground water monitoring data collected in accordance with subsection 7 including actual levels of constituents must be maintained in the facility operating record. The department will specify in the permit when the data must be submitted for review.

History: Effective January 1, 1984; amended effective December 1, 1991; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-55. Detection monitoring program.

An owner or operator required to establish a detection monitoring program under sections 33-24-05-47 through 33-24-05-58 shall, at a minimum, discharge the following responsibilities:

1. The owner or operator shall monitor for indicator parameters (for example, specific conductance, total organic carbon, or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in ground water. The department will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:

   a. The types, quantities, and concentrations of constituents in wastes managed at the regulated unit.

   b. The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area.

   c. The detectability of indicator parameters, waste constituents, and reaction products in ground water.

   d. The concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the ground water background.

2. The owner or operator shall install a ground water monitoring system at the compliance point under section 33-24-05-52 which complies with subdivision b of subsection 1, and subsections 2 and 3, of section 33-24-05-54.

3. The owner or operator must conduct a ground water monitoring program for each chemical parameter and hazardous constituent specified in the permit pursuant to subsection 1 in accordance with subsection 7 of section 33-24-05-54. The owner or operator must maintain a record of ground water analytical data as measured and in a form necessary for the determination of statistical significance under subsection 8 of section 33-24-05-54.

4. The department will specify the frequencies for collecting samples and conducting statistical tests to determine whether there is statistically significant evidence of contamination for any parameter or hazardous constituent specified in the permit conditions under subsection 1 in accordance with subsection 7 of section 33-24-05-54.

5. The owner or operator shall determine the ground water flow rate and direction in the uppermost aquifer at least annually.

6. The owner or operator must determine whether there is statistically significant evidence of contamination for any chemical parameter of hazardous constituent specified in the permit pursuant to subsection 1 at a frequency specified under subsection 4.

   a. In determining whether statistically significant evidence of contamination exists, the owner or operator must use the methods specified in the permit under subsection 8 of section 33-24-05-54. These methods must compare data collected at the compliance points to the background ground water quality data.

   b. The owner or operator must determine whether there is statistically significant evidence of contamination at each monitoring well at the compliance point within a reasonable period of time at the completion of sampling. The department will specify in the facility permit what period of time is reasonable, after considering the complexity of the statistical test and availability of laboratory facilities to perform the analysis of ground water samples.

7. If the owner or operator determines pursuant to subsection 6 that there is statistically significant evidence of contamination for chemical parameters or hazardous constituents specified pursuant to subsection 1 at any monitoring well at the compliance point, the owner or operator must:

   a. Notify the department of this finding in writing within seven days. The notification must indicate what chemical parameters or hazardous constituents have shown statistically significant evidence of contamination.

   b. Immediately sample the ground water in all monitoring wells and determine whether constituents in the list of appendix XII of chapter 33-24-05 are present, and if so, in what concentration. However, the department, on a discretionary basis, may allow sampling for a site-specific subset of constituents from the appendix XII of chapter 33-24-05 list and other representative or related, or both, waste constituents.

   c. For any appendix XII compounds found in the analysis pursuant to subdivision b, the owner or operator may resample within one month or at an alternative site-specific schedule approved by the department and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the owner or operator does not resample for the compounds in subdivision b, the hazardous constituents found during this initial appendix XII analysis will form the basis for compliance monitoring.

   d. Within ninety days, submit to the department an application for a permit modification to establish a compliance monitoring program meeting the requirements of section 33-24-05-56. The application must include the following information:

(1) An identification of the concentration of any appendix XII constituent detected in the ground water at each monitoring well at the compliance point.

(2) Any proposed changes to the ground water monitoring system at the facility necessary to meet the requirements of section 33-24-05-56.

(3) Any proposed additions or changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical methods used at the facility necessary to meet the requirements of section 33-24-05-56.

(4) For each hazardous constituent detected at the compliance point, a proposed concentration limit under subdivision a or b of subsection 1 of section 33-24-05-51, or a notice of intent to seek an alternate concentration limit under subsection 2 of section 33-24-05-51.

e. Within one hundred eighty days, submit to the department:

(1) All data necessary to justify an alternate concentration limit sought under subsection 2 of section 33-24-05-51; and

(2) An engineering feasibility plan for a corrective action program necessary to meet the requirements of section 33-24-05-57, unless:

(a) All hazardous constituents identified under subdivision b are listed in table 1 of section 33-24-05-51 and their concentrations do not exceed the respective values given in that table; or

(b) The owner or operator has sought an alternate concentration limit under subsection 2 of section 33-24-05-51 for every hazardous constituent identified under subdivision b.

f. If the owner or operator determines, pursuant to subsection 6, that there is a statistically significant difference for chemical parameters or hazardous constituents specified pursuant to subsection 1 at any monitoring well at the compliance point, the owner or operator may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. The owner or operator may make a demonstration under this subdivision in addition to, or in lieu of, submitting a permit modification application under subdivision d; however, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in subdivision d unless the demonstration made under this subdivision successfully shows that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration under this subdivision, the owner or operator must:

(1) Notify the department in writing within seven days of determining statistically significant evidence of contamination at the compliance point that the owner or operator intends to make a demonstration under this subdivision;

(2) Within ninety days, submit a report to the department which demonstrates that a source other than a regulated unit caused the contamination or that the contamination resulted from error in sampling, analysis, or evaluation;

(3) Within ninety days, submit to the department an application for a permit modification to make any appropriate changes to the detection monitoring program facility; and

(4) Continue to monitor in accordance with the detection monitoring program established under this section.

8. If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this section, the owner or operator must, within ninety days, submit an application for a permit modification to make any appropriate changes to the program.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-56. Compliance monitoring program.

An owner or operator who is required to establish a compliance monitoring program under sections 33-24-05-47 through 33-24-05-58 shall, at a minimum, discharge the following responsibilities:

1. The owner or operator shall monitor the ground water to determine whether regulated units are in compliance with the ground water protection standard under section 33-24-05-49. The department will specify the ground water protection standard in the facility permit, including:

   a. A list of the hazardous constituents identified under section 33-24-05-50.

   b. Concentration limits under section 33-24-05-51 for each of those hazardous constituents.

   c. The compliance point under section 33-24-05-52.

   d. The compliance period under section 33-24-05-53.

2. The owner or operator shall install a ground water monitoring system at the compliance point as specified under section 33-24-05-52. The ground water monitoring system must comply with subdivision b of subsection 1, and subsections 2 and 3, of section 33-24-05-54.

3. The department will specify the sampling procedures and statistical methods appropriate for the constituents and the facility, consistent with subsections 7 and 8 of section 33-24-05-54.

   a. The owner or operator must conduct a sampling program for each chemical parameter or hazardous constituent in accordance with subsection 7 of section 33-24-05-54.

   b. The owner or operator must record ground water analytical data as measured and in form necessary for the determination of statistical significance under subsection 8 of section 33-24-05-54 for the compliance period of the facility.

4. The owner or operator must determine whether there is statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the permit, pursuant to subsection 1, at a frequency specified under subsection 6.

   a. In determining whether statistically significant evidence of increased contamination exists, the owner or operator must use the methods specified in the permit under subsection 8 of section 33-24-05-54. The methods must compare data collected at the compliance points to a concentration limit developed in accordance with section 33-24-05-51.

   b. The owner or operator must determine whether there is statistically significant evidence of increased contamination at each monitoring well at the compliance point within a reasonable time period after completion of sampling. The department will specify that time period and the facility permit, after considering the complexity of the statistical test

and the availability of laboratory facilities to perform the analysis of ground water samples.

5. The owner or operator shall determine the ground water flow rate and direction in the uppermost aquifer at least annually.

6. The department will specify the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with subsection 7 of section 33-24-05-54.

7. Annually, the owner or operator must determine whether additional hazardous constituents from appendix XII, which could possibly be present but are not on the detection monitoring list in the permit, are actually present in the uppermost aquifer and, if so, at what concentration, pursuant to procedures in subsection 6 of section 33-24-05-55. To accomplish this, the owner or operator must consult with the department to determine on a case-by-case basis: which sample collection event during the year will involve enhanced sampling, the number of monitoring wells at the compliance point to undergo enhanced sampling, the number of samples to be collected from each of these monitoring wells, and the specific constituents from appendix XII for which these samples must be analyzed. If the enhanced sampling event indicates that appendix XII constituents are present in the ground water that are not already identified in the permit as monitoring constituents, the owner or operator may resample within one month or at an alternative site-specific schedule approved by the department, and repeat the appendix XII analysis. If the second analysis confirms the presence of new constituents, the owner or operator must report the concentration of these additional constituents to the department within seven days after the completion of the second analysis and add them to the monitoring list. If the owner or operator chooses not to resample, then the owner or operator must report the concentrations of these additional constituents to the department within seven days after completion of the initial analysis and add them to the monitoring list.

8. If the owner or operator determines pursuant to subsection 4 that any concentration limits under section 33-24-05-51 are being exceeded at any monitoring well at the point of compliance, the owner or operator must:

   a. Notify the department of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded.

   b. Submit to the department an application for a permit modification to establish a corrective action program meeting the requirements of section 33-24-05-57 within one hundred eighty days, or within ninety days if an engineering feasibility study has been previously submitted to the department under subdivision e of subsection 7 of section 33-24-05-55. The application must, at a minimum, include the following information:

      (1) A detailed description of corrective actions that will achieve compliance within the ground water protection standard specified in the permit under subsection 1.

      (2) A plan for a ground water monitoring program that will demonstrate the effectiveness of the corrective action. Such a ground water monitoring program may be based on a compliance monitoring program developed to meet the requirements of this section.

9. If the owner or operator determines, pursuant to subsection 4, that the ground water concentration limits under this section are being exceeded at any monitoring well at the point of compliance, the owner or operator may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. In making a demonstration under this subsection, the owner or operator must:

a. Notify the department in writing within seven days that the owner or operator intends to make a demonstration under this subsection.

b. Within ninety days, submit a report to the department which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis, or evaluation.

c. Within ninety days, submit to the department an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility.

d. Continue to monitor in accordance with the compliance monitoring program established under this section.

10. If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, the owner or operator shall, within ninety days, submit an application for a permit modification to make any appropriate changes to the program.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-57. Corrective action program.

An owner or operator required to establish a corrective action program under sections 33-24-05-47 through 33-24-05-58 shall, at a minimum, discharge the following responsibilities:

1. The owner or operator shall take corrective action to ensure that regulated units are in compliance with the ground water protection standard under section 33-24-05-49. The department will specify the ground water protection standard in the facility permit including:

   a. A list of the hazardous constituents identified under section 33-24-05-50.

   b. Concentration limits under section 33-24-05-51 for each of those hazardous constituents.

   c. The compliance point under section 33-24-05-52.

   d. The compliance period under section 33-24-05-53.

2. The owner or operator shall implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit will specify the specific measures that will be taken.

3. The owner or operator shall begin corrective action within a reasonable time period after the ground water protection standard is exceeded. The department will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of subdivision b of subsection 9 of section 33-24-05-56.

4. In conjunction with a corrective action program, the owner or operator shall establish and implement a ground water monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under section 33-24-05-56 and must be as effective as that

program in determining compliance with the ground water protection standard under section 33-24-05-49 and in determining the success of a corrective action program under subsection 5 where appropriate.

5. In addition to the other requirements of this section, the owner or operator shall conduct a corrective action program to remove or treat in place any hazardous constituents under section 33-24-05-50 that exceed concentration limits under section 33-24-05-51 in ground water:

   a. Between the compliance point under section 33-24-05-52 and the downgradient property boundary; and

   b. Beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the department that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. The owner or operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied. Onsite measures to address such releases will be determined on a case-by-case basis.

   c. Corrective action measures under this subsection must be initiated and completed within a reasonable period of time considering the extent of contamination.

   d. Corrective action measures under this subsection may be terminated once the concentration of hazardous constituents under section 33-24-05-50 is reduced to levels below their respective concentration limits under section 33-24-05-51.

6. The owner or operator shall continue corrective action measures during the compliance period to the extent necessary to ensure that the ground water protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, the owner or operator shall continue that corrective action for as long as necessary to achieve compliance with the ground water protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if the owner or operator can demonstrate, based on data from the ground water monitoring program under subsection 4 that the ground water protection standard of section 33-24-05-49 has not been exceeded for a period of three consecutive years.

7. The owner or operator shall report in writing to the department on the effectiveness of the corrective action program. The owner or operator shall submit these reports annually.

8. If the owner or operator determines that the corrective action program no longer satisfies the requirements of this section, the owner or operator shall, within ninety days, submit an application for a permit modification to make any appropriate changes to the program.

History: Effective January 1, 1984; amended effective January 1, 1994; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-58. Corrective action for solid waste management units.

1. The owner or operator of a facility seeking a permit for the treatment, storage, or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit.

2. Corrective action will be specified in the permit in accordance with this section and sections 33-24-05-550 through 33-24-05-559. The permit will contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

3. The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the department that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner or operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied. Onsite measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.

4. This section does not apply to remediation waste management sites unless they are part of a facility subject to a permit for treating, storing, or disposing of hazardous wastes that are not remediation wastes.

History: Effective October 1, 1986; amended effective January 1, 1994; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-59. Applicability of closure and postclosure requirements.

Except as section 33-24-05-01 provides otherwise:

1. Sections 33-24-05-60 through 33-24-05-64 (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

2. Sections 33-24-05-65 through 33-24-05-69 (which concern postclosure care) apply to the owners and operators of:

   a. All hazardous waste disposal facilities;

   b. Waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure to the extent that these sections are made applicable to such facilities in section 33-24-05-119 or 33-24-05-135;

   c. Tank systems that are required under section 33-24-05-110 to meet the requirements for landfills; and

   d. Containment buildings that are required under section 33-24-05-477 to meet the requirement for landfills.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 1994; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-60. Closure performance standard.

The owner or operator shall close the owner's or operator's facility in a manner that:

1. Minimizes the need for further maintenance;

2. Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate,

contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and

3. Complies with the closure requirements of sections 33-24-05-59 through 33-24-05-73, including the requirements of sections 33-24-05-97, 33-24-05-110, 33-24-05-122, 33-24-05-135, 33-24-05-151, 33-24-05-167, 33-24-05-180, 33-24-05-301 through 33-24-05-303, and section 33-24-05-477.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-61. Closure plan - Amendment of plan.

1. **Written plan.**

   a. The owner or operator of a hazardous waste management facility shall have a written closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by paragraph 1 of subdivision a of subsection 3 of section 33-24-05-122 and paragraph 1 of subdivision a of subsection 3 of section 33-24-05-135 to have contingent closure plans. The plan must be submitted with the permit application, in accordance with subdivision m of subsection 2 of section 33-24-06-17, and approved by the department as part of the permit issuance procedure under chapter 33-24-07. In accordance with section 33-24-06-05, the approved closure plan will become a condition of any hazardous waste permit.

   b. The department's approval of the plan must ensure that the approved closure plan is consistent with sections 33-24-05-60 through 33-24-05-64 and the applicable requirements of sections 33-24-05-47 through 33-24-05-58, 33-24-05-97, 33-24-05-110, 33-24-05-122, 33-24-05-135, 33-24-05-151, 33-24-05-167, 33-24-05-180, 33-24-05-301, and 33-24-05-477. Until final closure is completed and certified in accordance with section 33-24-05-64, a copy of the approved plan and all approved revisions must be furnished to the department upon request, including requests by mail.

2. **Content of plan.** The plan must identify steps necessary to perform partial or final, or both, closure of the facility at any point during its active life. The closure plan must include, at least:

   a. A description of how each hazardous waste management unit at the facility will be closed in accordance with section 33-24-05-60;

   b. A description of how final closure of the facility will be conducted in accordance with section 33-24-05-60. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility;

   c. An estimate of the maximum inventory of hazardous wastes ever onsite over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the types of the offsite hazardous waste management units to be used, if applicable;

   d. A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for

sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standards;

e. A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closures satisfy the closure performance standards, including, but not limited to, ground water monitoring, leachate collection, and run-on and runoff control;

f. A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included.);

g. For facilities that use trust funds or establish financial assurance under section 33-24-05-77 and that are expected to close prior to the expiration of the permit, an estimate of the expected year of final closure; and

h. A closure cost estimate.

3. **Amendment of plan.** The owner or operator must submit a written notification of, or request for, a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the applicable procedures in chapters 33-24-06 and 33-24-07. The written notification or request must include a copy of the amended closure plan for review or approval by the department.

a. The owner or operator may submit a written notification or request to the department for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

b. The owner or operator must submit a written notification of, or request for, a permit modification to authorize a change in the approved closure plan when:

(1) Changes in operating plans or facility design affect the closure plan;

(2) There is a change in the expected year of closure, if applicable; or

(3) In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

c. The owner or operator shall submit a written request for a permit modification, including a copy of the amended closure plan for approval at least sixty days prior to the proposed change in facility design or operation, or no later than sixty days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator shall request a permit modification no later than thirty days after the unexpected event. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under paragraph 1 of subdivision a of subsection 3 of section 33-24-05-122 or paragraph 1 of subdivision a of subsection 3 of section 33-24-05-135 shall submit an amended closure plan to the department no later than sixty days from the date that the owner or operator or department determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of section 33-24-05-180, or no later than thirty days from that date if the determination is made during partial or final closure. The department will approve, disapprove, or modify this amended plan in accordance with the procedures

in chapters 33-24-06 and 33-24-07. In accordance with section 33-24-06-05, the approved closure plan will become a condition of the hazardous waste permit issued.

d. The department may request modifications to the plan under the conditions described in subdivision b. The owner or operator shall submit the modified plan within sixty days of the department's request, or within thirty days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the department will be approved in accordance with procedures in chapters 33-24-06 and 33-24-07.

4. **Notification of partial closure and final closure.**

a. The owner or operator shall notify the department in writing at least sixty days prior to the date on which the owner or operator expects to begin closure of a surface impoundment, waste pile, land treatment or landfill unit, or final closure of a facility with such a unit. The owner or operator shall notify the department in writing at least forty-five days prior to the date on which the owner or operator expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed. The owner or operator must notify the department in writing at least forty-five days prior to the date which the owner or operator expects to begin partial or final closure of a boiler or industrial furnace, whichever is earlier.

b. The date when the owner or operator "expects to begin closure" must be either no later than thirty days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous waste, no later than one year after the date on which the unit received the most recent volume of hazardous waste. If the owner or operator of a hazardous waste management unit can demonstrate to the department that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and the owner or operator has taken and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, the department may approve an extension to this one-year limit.

c. If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under North Dakota Century Code section 23-20.3-08, to cease receiving hazardous waste or to close, then the requirements of this subsection do not apply. However, the owner or operator shall close the facility in accordance with the deadlines established in section 33-24-05-62.

5. **Removal of wastes and decontamination or dismantling of equipment.** Nothing in this section precludes the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-62. Closure - Time allowed for closure.

1. Within ninety days after receiving the final volume of hazardous wastes at a hazardous waste management unit or facility, the owner or operator shall treat, remove from the unit or facility, or dispose of onsite, all hazardous wastes in accordance with the approved closure plan. The department may approve a longer period if the owner or operator complies with all applicable

requirements for requesting a modification to the permit and demonstrates that one or both of the following subdivisions apply:

a. The activities required to comply with this subsection will, of necessity, take longer than ninety days to complete; or

b. All of the following apply:

(1) The hazardous waste management unit or facility has the capacity to receive additional hazardous waste;

(2) There is a reasonable likelihood that the owner or operator or another person will recommence operation of the hazardous waste management unit or the facility within one year;

(3) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(4) The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements.

2. The owner or operator shall complete partial and final closure activities in accordance with the approved closure plan and within one hundred eighty days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility. The department may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that one or both of the following subdivisions apply:

a. The partial or final closure activities will, of necessity, take longer than one hundred eighty days to complete; or

b. All of the following apply:

(1) The hazardous waste management unit or facility has the capacity to receive additional hazardous waste;

(2) There is reasonable likelihood that the owner or operator or another person will recommence operation of the hazardous waste management unit or the facility within one year;

(3) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(4) The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility including compliance with all applicable permit requirements.

3. The demonstrations referred to in subsections 1 and 2 must be made as follows: The demonstrations in subsection 1 must be made at least thirty days prior to expiration of the ninety-day period in subsection 1; and the demonstration in subsection 2 must be made at least thirty days prior to the expiration of the one hundred eighty-day period in subsection 2.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-63. Disposal or decontamination of equipment, structures, and soils.

During the partial and final closure periods, all contaminated equipment, structures, and soils must be properly disposed of or decontaminated unless otherwise specified in sections 33-24-05-110, 33-24-05-122, 33-24-05-135, 33-24-05-167, or 33-24-05-180. By removing any hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and shall handle that waste in accordance with all applicable requirements of chapter 33-24-03.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-64. Certification of closure.

Within sixty days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit, and within sixty days of the completion of final closure, the owner or operator shall submit to the department, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by a qualified professional engineer. Documentation supporting the professional engineer's certification must be furnished to the department upon request until the department releases the owner or operator from the financial assurance requirements for closure under subsection 9 of section 33-24-05-77.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-65. Survey plat.

No later than the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the department, a survey plot indicating the location and dimensions of landfill cells, or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with a local zoning authority or the authority with jurisdiction over local land use, must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable regulations under sections 33-24-05-59 through 33-24-05-73.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-66. Postclosure care and use of property.

1. Postclosure care requirements.

    a. Postclosure care for each hazardous waste management unit subject to the requirements of sections 33-24-05-66 through 33-24-05-69 must begin after completion of closure of the unit and continue for thirty years after that date and must consist of at least the following:

(1) Monitoring and reporting in accordance with the requirements of sections 33-24-05-47 through 33-24-05-58, sections 33-24-05-118 through 33-24-05-143, sections 33-24-05-160 through 33-24-05-190, and sections 33-24-05-300 through 33-24-05-309; and

(2) Maintenance and monitoring of waste containment systems in accordance with the requirements of sections 33-24-05-47 through 33-24-05-58, sections 33-24-05-118 through 33-24-05-143, sections 33-24-05-160 through 33-24-05-190, and sections 33-24-05-300 through 33-24-05-309.

b. Anytime preceding partial closure of a hazardous waste management unit subject to postclosure care requirements or final closure, or anytime during the postclosure period for a particular unit, the department may, in accordance with the permit modification procedures in chapters 33-24-06 and 33-24-07:

(1) Shorten the postclosure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if the department finds that the reduced period is sufficient to protect human health and the environment (for example, leachate or ground water monitoring results, characteristics of the hazardous waste, application of advanced technology or alternative disposal, treatment, or reuse techniques indicate that the hazardous waste management unit or facility is secure); or

(2) Extend the postclosure care period applicable to the hazardous waste management unit or facility if the department finds that the extended period is necessary to protect human health or the environment (for example, leachate or ground water monitoring results indicate a potential for migration of hazardous waste at levels which may be harmful to human health or the environment).

2. The department may require, at partial and final closure, continuation of any of the security requirements of section 33-24-05-05 during part or all of the postclosure period when:

a. Hazardous wastes may remain exposed after completion of partial or final closure; or

b. Access by the public or domestic livestock may pose a hazard to human health.

3. Postclosure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liners, or any other components of the containment system, or the function of the facility's monitoring systems, unless the department finds that the disturbance:

a. Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

b. Is necessary to reduce a threat to human health or the environment.

4. All postclosure care activities must be in accordance with the provisions of the approved postclosure plan as specified in section 33-24-05-67.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-67. Postclosure plan - Amendment of plan.

1. Written plan. The owner or operator of a hazardous waste disposal unit shall have a written postclosure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by paragraph 2 of subdivision a of subsection 3 of section 33-24-05-122 and paragraph 2 of subdivision a of subsection 3 of section 33-24-05-135 to have contingent postclosure plans. Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent postclosure plans under paragraph 2 of subdivision a of subsection 3 of section 33-24-05-122 and paragraph 2 of subdivision a of subsection 3 of section 33-24-05-135 shall submit a postclosure plan to the department within ninety days from the date that the owner or operator or department determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of sections 33-24-05-66 through 33-24-05-69. The plan must be submitted with the permit application in accordance with section 33-24-06-17, and approved by the department as part of the permit issuance procedure under chapter 33-24-07. In accordance with section 33-24-06-05, the approved postclosure plan will become a condition of any hazardous waste permit issued.

2. For each hazardous waste management unit subject to the requirements of this section, the postclosure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

   a. A description of the planned monitoring activities and frequencies at which they will be performed to comply with sections 33-24-05-47 through 33-24-05-58, sections 33-24-05-118 through 33-24-05-143, sections 33-24-05-160 through 33-24-05-190, and sections 33-24-05-300 through 33-24-05-309 during the postclosure care period;

   b. A description of the planned maintenance activities, and frequencies at which they will be performed to ensure:

      (1) The integrity of the cap and final cover or other containment systems in accordance with the requirements of sections 33-24-05-47 through 33-24-05-58, sections 33-24-05-118 through 33-24-05-143, sections 33-24-05-160 through 33-24-05-190, and sections 33-24-05-300 through 33-24-05-309;

      (2) The function of the monitoring equipment in accordance with the requirements of sections 33-24-05-47 through 33-24-05-58, sections 33-24-05-118 through 33-24-05-143, sections 33-24-05-160 through 33-24-05-190, and sections 33-24-05-300 through 33-24-05-309; and

   c. The name, address, and telephone number of the persons or office to contact about the hazardous waste disposal unit or facility during the postclosure care period.

3. Until final closure of the facility, a copy of the approved postclosure plan must be furnished to the department upon request, including request by mail. After final closure has been certified, the person or office specified in subdivision c of subsection 2 shall keep the approved postclosure plan during the remainder of the postclosure period.

4. The owner or operator must submit a written notification of, or request for, a permit modification to authorize a change in the approved postclosure plan in accordance with the applicable requirements in chapters 33-24-06 and 33-24-07. The written notification or request must include a copy of the amended postclosure plan for review or approval by the department.

a. The owner or operator may submit a written notification or request to the department for a permit modification to amend the postclosure plan at any time during the active life of the facility or during the postclosure care period.

b. The owner or operator must submit a written notification of, or request for, a permit modification to authorize a change in the approved postclosure plan whenever:

(1) Changes in operating plans or facility design affect the approved postclosure plan;

(2) There is a change in the expected year of final closure, if applicable; or

(3) Events which occur during the active life of the facility, including partial and final closures, affect the approved postclosure plan.

c. The owner or operator shall submit a written request for a permit modification at least sixty days prior to the proposed change in facility design or operation, or no later than sixty days after an unexpected event has occurred which has affected the postclosure plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent postclosure plan under paragraph 2 of subdivision a of subsection 3 of section 33-24-05-122 and paragraph 2 of subdivision a of subsection 3 of section 33-24-05-135 shall submit a postclosure plan to the department no later than ninety days after the date that the owner or operator or department determine that the hazardous waste management unit must be closed as a landfill, subject to the requirements of section 33-24-05-180. The department will approve, disapprove, or modify this plan in accordance with the procedures in chapters 33-24-06 and 33-24-07. In accordance with section 33-24-06-05, the approved postclosure plan will become a permit condition.

d. The department may request modifications to the plan under the conditions described in subdivision b. The owner or operator shall submit the modified plan no later than sixty days after the department's request, or no later than ninety days if the unit is a surface impoundment or waste pile not previously required to prepare a contingent postclosure plan. Any modifications requested by the department will be approved, disapproved, or modified in accordance with the procedures in chapters 33-24-06 and 33-24-07.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-68. Postclosure notices.

1. No later than sixty days after certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the department a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous waste disposed of before January 12, 1981, the owner or operator shall identify the type, location, and quantity of the hazardous wastes to the best of the owner's or operator's knowledge and in accordance with any records the owner or operator has kept.

2. Within sixty days of certification of closure of the first hazardous waste disposal unit and within sixty days of certification of closure of the last hazardous waste disposal unit, the owner or operator shall:

a. Record, in accordance with state law, a notation on the deed to the facility property - or on some other instrument which is normally examined during title search - that will in perpetuity notify any potential purchaser of the property that:

(1) The land has been used to manage hazardous waste;

(2) Use of the land is restricted under sections 33-24-05-59 through 33-24-05-73; and

(3) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by section 33-24-05-65 and subsection 1 have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the department; and

b. Submit a certification, signed by the owner or operator, that the owner or operator has recorded the notation specified in subdivision a of subsection 2, including a copy of the document in which the notation has been placed, to the department.

3. If the owner or operator or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, the owner or operator shall request a modification to the postclosure permit in accordance with the applicable requirements in chapters 33-24-06 and 33-24-07. The owner or operator shall demonstrate that the removal of the hazardous waste will satisfy the criteria of subsection 3 of section 33-24-05-66. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and shall manage it in accordance with all applicable requirements of this article. If the owner or operator is granted a permit modification or otherwise granted approval to conduct such removal activities, the owner or operator may request that the department approve either:

a. The removal of the notation on the deed to the facility property or other instrument normally examined during title search; or

b. In addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-69. Certification of completion of postclosure care.

No later than sixty days after completion of the established postclosure care period for each hazardous waste disposal unit, the owner or operator shall submit to the department, by registered mail, a certification that the postclosure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved postclosure plan. The certification must be signed by the owner or operator and a qualified professional engineer. Documentation supporting the professional engineer's certification must be furnished to the department upon request until the department releases the owner or operator from the financial assurance requirements for postclosure care under subsection 9 of section 33-24-05-77.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-70. [Reserved]

33-24-05-71. [Reserved]

33-24-05-72. [Reserved]

33-24-05-73. [Reserved]

33-24-05-74. Applicability of financial requirements.

1. The requirements of sections 33-24-05-76, 33-24-05-77, and 33-24-05-79 through 33-24-05-81 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this section or in section 33-24-05-01.

2. The requirements of sections 33-24-05-76 and 33-24-05-77 apply only to owners and operators of:

   a. Disposal facilities;

   b. Piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that these sections are made applicable to such facilities in sections 33-24-05-122 and 33-24-05-135;

   c. Tank systems that are required under section 33-24-05-110 to meet the requirements for landfills; and

   d. Containment buildings that are required under section 33-24-05-477 to meet the requirements for landfills.

3. Federal agencies and agencies of the government of the state of North Dakota are exempt from the financial requirements.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 1994; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-75. Definitions of terms used in sections 33-24-05-74 through 33-24-05-88.

1. "Closure plan" means the plan for closure prepared in accordance with the requirements of section 33-24-05-61.

2. "Current closure cost estimate" means the most recent of the closure cost estimates prepared in accordance with subsections 1, 2, and 3 of section 33-24-05-76.

3. "Current postclosure cost estimate" means the most recent of the postclosure cost estimates prepared in accordance with subsections 1, 2, and 3 of section 33-24-05-76.

4. "Parent corporation" means a corporation which directly owns at least fifty percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

5. "Postclosure plan" means the plan for postclosure care prepared in accordance with the requirements of sections 33-24-05-66 through 33-24-05-69.

6. The following terms are used in the specifications for the financial tests for closure, postclosure care, and liability coverage. The definitions are intended to assist in the understanding of these sections and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

"Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

"Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

"Current liability" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

"Current plugging and abandonment cost estimate" means the most recent of the estimates prepared in accordance with 40 CFR part 144.62(a), (b), and (c).

"Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

"Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

"Net working capital" means current assets minus current liabilities.

"Net worth" means total assets minus total liabilities and is equivalent to owners equity.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

7. In the liability insurance requirements, the terms "bodily injury" and "property damage" have the meanings given these terms by applicable state law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage and liability policies for bodily injury and property damage. The department intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in any way that conflicts with general insurance industry usage.

   "Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage, neither expected nor intended from the standpoint of the insured.

   "Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

   "Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

   "Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

8. "Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A "substantial business relationship" must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the department.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 1994; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-76. Cost estimates for closure and postclosure care.

1. **The cost estimates for closure.**

   a. The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in sections 33-24-05-60 through 33-24-05-64 and applicable closure requirements in sections 33-24-05-97, 33-24-05-110, 33-24-05-122, 33-24-05-135, 33-24-05-151, 33-24-05-167, 33-24-05-180, sections 33-24-05-301 through 33-24-05-303, and section 33-24-05-477.

      (1) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see subsection 2 of section 33-24-05-61).

      (2) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in subsection 4 of section 33-24-05-75.) The owner or operator may use costs for onsite disposal if the owner or operator can demonstrate that onsite disposal capacity will exist at all times over the life of the facility.

      (3) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

      (4) The owner or operator may not incorporate a zero cost for hazardous wastes that might have economic value.

   b. During the active life of the facility, the owner or operator shall adjust the closure cost estimate for inflation within sixty days prior to the anniversary date of the establishment of the financial instruments used to comply with section 33-24-05-77. For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within thirty days after the close of the firm's fiscal year and before submission of updated information to the department as specified in subdivision c of subsection 6 of section 33-24-05-77. The adjustment may be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent implicit price deflator for gross national product published by the United States department of commerce in its survey of current business as specified in paragraphs 1 and 2. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year.

      (1) The first adjustment is made by multiplying the closure cost estimates by the inflation factor. The result is the adjusted closure cost estimate.

      (2) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimates by the latest inflation factor.

   c. During the active life of the facility, the owner or operator shall revise the closure cost estimate no later than thirty days after the department has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure.

The revised closure cost estimate must be adjusted for inflation as specified in subdivision b.

d. The owner or operator shall keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with subdivisions a and c and, when this estimate has been adjusted in accordance with subdivision b, the latest adjusted closure cost estimate.

2. **Cost estimate for postclosure care.**

a. The owner or operator of a disposal surface impoundment, disposal miscellaneous unit, land treatment, or landfill unit, or a surface impoundment or waste pile required under sections 33-24-05-122 and 33-24-05-135 to prepare a contingent closure and postclosure plan, shall have a detailed written estimate in current dollars, of the annual cost of postclosure monitoring and maintenance of the facility in accordance with the applicable postclosure rules in sections 33-24-05-66 through 33-24-05-69, sections 33-24-05-122, 33-24-05-135, 33-24-05-167, 33-24-05-180, and 33-24-05-303.

(1) The postclosure cost estimate must be based on the cost to the owner or operator of hiring a third party to conduct postclosure care activities. A third party is a party who is neither a parent or subsidiary of the owner or operator. (See definition of parent corporation in subsection 4 of section 33-24-05-75.)

(2) The postclosure cost estimate is calculated by multiplying the annual postclosure cost estimate by the number of years of postclosure care required under section 33-24-05-66.

b. During the active life of the facility, the owner or operator shall address the postclosure cost estimate for inflation within sixty days prior to the anniversary date of the establishment of the financial instruments used to comply with section 33-24-05-77. For owners or operators using the financial test or corporate guarantee, the postclosure cost estimate must be updated for inflation within thirty days after the close of the firm's fiscal year and before the submission of updated information to the department as specified in subdivision e of subsection 6 of section 33-24-05-77. The adjustment may be made by recalculating the postclosure cost estimate in current dollars or by using an inflation factor derived from the most recent implicit price deflator for gross national product published by the United States department of commerce in a survey of current business as specified in paragraphs 1 and 2. The inflation factor is the result of dividing the latest annual published deflator by the deflator for the previous year.

(1) The first adjustment is made by multiplying the postclosure cost estimate by the inflation factor. The result is the adjusted postclosure cost estimate.

(2) Subsequent adjustments are made by multiplying the latest adjusted postclosure cost estimate by the latest inflation factor.

c. During the active life of the facility, the owner or operator shall revise the postclosure cost estimate within thirty days after the department has approved a request to modify the postclosure plan, if the change in the postclosure plan increases the cost of postclosure care. The revised postclosure cost estimate must be adjusted for inflation as specified in subdivision b.

d. The owner or operator shall keep the following at the facility during the operating life of the facility: the latest postclosure cost estimate prepared in accordance with subdivisions a and c and, when this estimate has been adjusted in accordance with subdivision b, the latest adjusted postclosure cost estimate.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-77. Financial assurance for closure and postclosure care.

In accordance with section 33-24-05-74, an owner or operator of each facility shall establish financial assurance for closure and postclosure of the facility. The owner or operator of a hazardous waste management unit subject to the postclosure requirements of section 33-24-05-76 shall establish financial assurance for postclosure care in accordance with the approved postclosure plan for the facility sixty days prior to the initial receipt of hazardous waste or the effective date of the regulations, whichever is later. The owner or operator shall choose from the options as specified in subsections 1 through 6.

1. **Closure and postclosure trust fund.**

   a. An owner or operator may satisfy the requirements of this section by establishing a closure and postclosure trust fund which conforms to the requirements of this subsection and submitting an originally signed duplicate of the trust agreement to the department. An owner or operator of the new facility shall submit the originally signed duplicate of the trust agreement to the department at least sixty days before the day on which hazardous waste is first received for treatment, storage, or disposal. The trustee must be an entity which has the authority to act as a trustee in this state and whose trust operations are regulated and examined by a federal agency or by the state department of financial institutions.

   b. The wording of the trust agreement must be identical to the wording specified in subdivision a of subsection 1 of section 33-24-05-81 and the trust agreement must be accompanied by a formal certification of acknowledgment (for example see subdivision b of subsection 1 of section 33-24-05-81). Schedule A of the trust agreement must be updated within sixty days after a change in the amount of the current closure and postclosure cost estimate covered by the agreement.

   c. Payments into the trust fund must be made annually by the owner or operator over the term of the initial hazardous waste permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereinafter referred to as the "pay-in period". The payments into the trust fund must be made as follows:

      (1) For a new facility the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the department before the initial receipt of hazardous waste. The first payment must be at least equal to the current closure and postclosure cost estimate, except as provided in subsection 7, divided by the number of years in the pay-in period. Subsequent payments must be made no later than thirty days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next Payment} = \frac{CE-CV}{Y}$$

      Where CE is the current closure and postclosure cost estimate, CV is the current value of the trust fund and Y is the number of years remaining in the pay-in period.

(2) If an owner or operator establishes a trust fund as specified in 40 CFR part 265.143(a) or 265.145(a) of the federal hazardous waste regulations and the value of that trust fund is less than the current closure and postclosure cost estimate when a permit is awarded to the facility, the amount of the current closure and postclosure cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in subdivision c. Payments must continue to be made no later than thirty days after each anniversary date of the first payment made pursuant to 40 CFR part 265. The amount of each payment must be determined by this formula:

$$\text{Next Payment} = \frac{CE-CV}{Y}$$

Where CE is the current closure and postclosure cost estimate, CV is the current value of the trust fund and Y is the number of years remaining in the pay-in period.

d. The owner or operator may accelerate payments into the trust fund or the owner or operator may deposit the full amount of the current closure and postclosure cost estimate at the time the fund is established. However, the owner or operator shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in subdivision c.

e. If the owner or operator establishes a closure and postclosure trust fund after having used one or more alternate mechanisms specified in this section (or in 40 CFR part 265.143 or 265.145), the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments were made according to the specifications of subdivision c.

f. After the pay-in period is completed, when the current closure and postclosure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator within sixty days after the change in the cost estimate shall either deposit an amount into the fund so that its value after the deposit at least equals the amount of the current closure and postclosure cost estimate or obtain other financial assurance as specified in this section to cover the difference.

g. If the value of the trust fund is greater than the total amount of the current closure and postclosure cost estimate, the owner or operator may submit a written request to the department for release of the amount in excess of the current closure and postclosure cost estimate.

h. If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, the owner or operator may submit a written request to the department for release of the amount in excess of the current closure and postclosure cost estimate covered by the trust fund.

i. Within sixty days after receiving a request from the owner or operator for release of funds as specified in subdivision g or h, the department will instruct the trustee to release to the owner or operator such funds as the department specifies in writing.

j. During the period of postclosure care, the department may approve a release of funds if the owner or operator demonstrates to the department that the value of the trust fund exceeds the remaining cost of the postclosure care.

k. After beginning partial or final closure or during the postclosure care period, or both, an owner or operator or any other person authorized to perform partial or final closure or postclosure activities may request reimbursement for expenditures incurred during these activities by submitting itemized bills to the department. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the trust fund to cover the maximum cost of closing the facility over its remaining operating life. Within sixty days after receiving bills for partial or final closure or postclosure activities, the department will determine whether the expenditures are in accordance with the closure or postclosure plans or otherwise justified and if so, the department will instruct the trustee to make reimbursement in such amounts as the department specifies in writing. If the department has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, the department may withhold reimbursement of such amounts as the department deems prudent until the department determines in accordance with subsection 9 that the owner or operator is no longer required to maintain financial assurance for final closure. If the department does not instruct the trustee to make such reimbursements, the department will provide the owner or operator with a detailed written statement of reasons.

l. The department will agree to termination of the trust when:

(1) An owner or operator substitutes alternate financial assurance as specified in this section; or

(2) The department releases the owner or operator from the requirements of this subsection in accordance with subsection 9.

2. **Surety bond guaranteeing payment into a closure and postclosure trust fund.**

a. An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the department. An owner or operator of a new facility must submit the bond to the department at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the United States department of treasury and be authorized to do business within this state. If the surety is using reinsurance, a treasury reinsurance form must be submitted with the bond or within forty-five days thereafter. If cosureties are being used, the original bond must reflect that fact.

b. The wording of the surety bond must be identical to the wording specified in subsection 2 of section 33-24-05-81.

c. The owner or operator who uses a surety bond to satisfy the requirements of this section shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the department. This standby trust fund must meet the requirements specified in subsection 1 except that:

(1) An originally signed duplicate of the trust agreement must be submitted to the department with the surety bond; and

(2) Until the standby trust fund is funded pursuant to the requirements of this subsection, the following are not required by this chapter:

(a) Payments into the trust fund as specified in subsection 1.

(b) Updating of schedule A of the trust agreement to show current closure and postclosure cost estimates.

(c) Annual evaluations as required by the trust agreement.

(d) Notices of nonpayment as required by the trust agreement.

d. The bond must guarantee that the owner or operator will:

(1) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility;

(2) Fund the standby trust fund in an amount equal to the penal sum within fifteen days after an order to begin final closure is issued by the department or a United States district court or other court of competent jurisdiction; or

(3) Provide alternate financial assurance as specified in this section and obtain the department's written approval of the assurance provided within ninety days after receipt by both the owner or operator of a notice of cancellation of the bond from the surety.

e. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

f. The penal sum of the bond must be in an amount at least equal to the current closure and postclosure cost estimate, except as provided in subsection 7.

g. Whenever the current closure and postclosure cost estimate increases to an amount greater than the penal sum, the owner or operator within sixty days after the increase must either cause the penal sum to be increased to an amount at least equal to the current closure and postclosure cost estimate and submit evidence of such increase to the department or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure and postclosure cost estimate decreases, the penal sum may be reduced to the amount of the current closure and postclosure cost estimate following written approval by the department.

h. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the one hundred twenty days beginning on the date of receipt of cancellation by both the owner or operator and the department as evidenced by the return receipts.

i. The owner or operator may cancel the bond if the department has given prior written consent based on the department's receipt of evidence of alternate financial assurance as specified in this section.

3. **Surety bond guaranteeing performance of closure and postclosure care.**

a. An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the department. An owner or operator of a new facility shall submit the bond to the department at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those acceptable sureties on federal bonds in Circular 570 of the United States department of treasury and be authorized to do business within the state of North Dakota. If the surety is using reinsurance a treasury reinsurance form must be submitted

with the bond or within forty-five days thereafter. If cosureties are being used, the original bond must reflect that fact.

b. The wording of the surety bond must be identical to the wording specified in subsection 3 of section 33-24-05-81.

c. The owner or operator who uses a surety bond to satisfy the requirements of this section shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the department. This standby trust fund must meet the requirements specified in subsection 1 except that:

   (1) An originally signed duplicate of the trust agreement must be submitted to the department with the surety bond; and

   (2) Until the standby trust fund is funded pursuant to the requirements of this subsection, the following are not required by this chapter:

      (a) Payments into the trust fund as specified in subsection 1.

      (b) Updating of schedule A of the trust agreement to show current closure and postclosure cost estimates.

      (c) Annual valuations as required by the trust agreement.

      (d) Notices of nonpayment as required by the trust agreement.

d. The bond must guarantee that the owner or operator will:

   (1) Perform postclosure care and final closure in accordance with the postclosure and closure plan and other requirements of the permit for the facility when required to do so; or

   (2) Provide alternate financial assurance as specified in this section and obtain the department's written approval of the assurance provided within ninety days after receipt by both the owner or operator and the department of a notice of cancellation of the bond from the surety.

e. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the department that the owner or operator has failed to perform postclosure care or final closure in accordance with the closure or postclosure plan and other permit requirements when required to do so, under the terms of the bond the surety will perform the postclosure care or final closure as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.

f. The penal sum of the bond must be in an amount at least equal to the current closure or postclosure cost estimate, or both.

g. Whenever the current closure or postclosure cost estimate, or both, increases to an amount greater than the penal sum, the owner or operator within sixty days after the increase must either cause the penal sum to be increased to an amount at least equal to the current closure or postclosure cost estimate, or both, and submit evidence of such increase to the department or obtain other financial assurance as specified in this section. Whenever the current closure or postclosure cost estimate, or both, decreases the penal sum may be reduced to the amount of the current closure or postclosure cost estimate, or both, following written approval by the department.

h. During the period of postclosure care, the department may approve a decrease in the penal sum if the owner or operator demonstrates to the department that the amount exceeds the remaining cost of postclosure care.

i. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the one hundred twenty days beginning on the date of receipt of this notice of cancellation by both the owner or operator and the department as evidenced by the return receipts.

j. The owner or operator may cancel the bond if the department has given prior written consent. The department will provide such written consent when:

(1) An owner or operator substitutes alternate financial assurance as specified in this section; or

(2) The department releases the owner or operator from the requirements of this subsection in accordance with subsection 9.

k. The surety will not be liable for deficiencies in the performance of closure or postclosure care by the owner or operator after the department releases the owner or operator from the requirements of this subsection in accordance with subsection 9.

4. **Closure and postclosure letter of credit.**

a. An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this subsection and submitting the letter to the department. An owner or operator of a new facility must submit the letter of credit to the department at least sixty days before the date on which hazardous waste is first received for disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit in this state and whose letters of credit operations are regulated and examined by a federal agency or by the state department of financial institutions.

b. The wording of the letter of credit must be identical to the wording specified in subsection 4 of section 33-24-05-81.

c. An owner or operator who uses a letter of credit to satisfy the requirements of this section shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the department will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the department. This standby trust fund must meet the requirements of the trust fund specified in subsection 1 except that:

(1) An originally signed duplicate of the trust agreement must be submitted to the department with the letter of credit.

(2) Unless the standby trust fund is funded pursuant to the requirements of this subsection the following are not required by this chapter:

(a) Payments into the trust fund as specified in subsection 1.

(b) Updating of schedule A of the trust agreement to show current or postclosure, or both, cost estimates.

(c) Annual valuations as required by the trust agreement; and

(d) Notices of nonpayment as required by the trust agreement.

d. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution and date and providing the following information: The identification number, name, and address of the facility and the amount of funds assured for closure and postclosure care of the facility by the letter of credit.

e. The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless at least one hundred twenty days before the current expiration date, the issuing institution notifies both the owner or operator and the department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the one hundred twenty days will begin on the date when both the owner or operator and the department have received notice as evidenced by the return receipts.

f. The letter of credit must be issued in an amount at least equal to the current closure or postclosure, or both, cost estimate, except as provided in subsection 7.

g. Whenever the current closure or postclosure or both, cost estimate, increases to an amount greater than the amount of the letter of credit during the operating life of the facility, the owner or operator within sixty days after the increase shall either cause the amount of the letter of credit to be increased so that it at least equals the current closure or postclosure, or both, cost estimate, and submit evidence of such increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure or postclosure, or both, cost estimate decreases, the amount of the credit may be reduced to the amount of the current estimate following written approval by the department.

h. During the period of postclosure care, the department may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the department that the amount exceeds the remaining cost of postclosure care.

i. Following a determination by the department that the owner or operator has failed to perform closure or postclosure care in accordance with the closure or postclosure plan or other permit requirements, the department may draw on the letter of credit.

j. If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the department within ninety days after receipt by both the owner or operator and the department of a notice from the issuing institution that the issuing institution has decided not to extend the letter of credit beyond the current expiration date, the department will draw on the letter of credit. The department may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty days of any such extension, the department will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the department.

k. The department will return the letter of credit to the issuing institution when:

(1) An owner or operator substitutes alternate financial assurance as specified in this section; or

(2) The department releases the owner or operator from requirements of this subsection in accordance with subsection 9.

5. **Closure and postclosure insurance.**

a. An owner or operator may satisfy the requirements of this section by obtaining closure and postclosure insurance which conforms to the requirements of this subsection and submitting a certificate of such insurance to the department. An owner or operator of a new facility must submit the certificate of insurance to the department at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance in this state or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

b. The wording of the certificate of insurance must be identical to the wording specified in subsection 5 of section 33-24-05-81.

c. The closure and postclosure insurance policy must be issued for a face amount of at least equal to the current closure or postclosure, or both, cost estimate, except as provided in subsection 7. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

d. The closure and postclosure insurance policy must guarantee that funds will be available to close the facility or perform postclosure final care, or both, when final closure or the postclosure period begins. The policy must also guarantee that once final closure or postclosure begins the insurer will be responsible for paying out funds up to an amount equal to the face amount of the policy upon the direction of the department to such party or parties as the department specifies.

e. After beginning partial or final closure or during the postclosure period, or both, an owner or operator or any other person authorized to perform closure or postclosure may request reimbursement for closure or postclosure expenditures by submitting itemized bills to the department. The owner or operator may request reimbursement for partial closure only if the remaining value of the policy is sufficient to cover the maximum cost of closing the facility over its remaining operating life. Within sixty days after receiving bills for closure or postclosure activities, the department will determine whether the expenditures are in accordance with the partial or final closure or postclosure plan or otherwise justified and if so, the department will instruct the insurer to make reimbursement in such amounts as the department specifies in writing. If the department has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the face amount of the policy, the department may withhold reimbursement of such amounts as the department deems prudent until the department determines, in accordance with subsection 9, that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the department does not instruct the insurer to make such reimbursement, the department will provide the owner or operator with a detailed written statement of reasons.

f. The owner or operator shall maintain the policy in full force and effect until the department consents to termination of the policy by the owner or operator as specified in subdivision k. Failure to pay the premium without substitution of alternate financial assurance, as specified in this section, will constitute a significant violation of this chapter warranting such remedy as the department deems necessary. Such violation will be deemed to begin upon receipt by the department of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

g. Each policy must contain a provision allowing assignment of the policy to a successor, owner, or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

h. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy, except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the department. Cancellation, termination, or failure to renew may not occur, however, during the one hundred twenty days beginning with the date of receipt of a notice by the department and the owner or operator as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(1) The department deems the facility abandoned;

(2) The permit is terminated or revoked or a new permit is denied;

(3) Closure is ordered by the department or a state court or other court of competent jurisdiction;

(4) The owner or operator is named as debtor in a voluntary or involuntary proceeding under United States Code title 11 (bankruptcy); or

(5) The premium due is paid.

i. Whenever the current closure or postclosure, or both, cost estimate increases to an amount greater than the face amount of the policy, the owner or operator within sixty days after the increase must either cause the face amount to be increased to an amount at least equal to the current closure or postclosure, or both, cost estimate and submit evidence of such increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure or postclosure, or both, cost estimate decreases, the face amount may be reduced to the amount of the current closure or postclosure, or both, cost estimate following a written approval by the department.

j. For postclosure insurance only, commencing on the date that liability to make payments pursuant to a postclosure policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amount of the policy less any payments made, multiplied by an amount equivalent to eighty-five percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the United States treasury for twenty-six-week treasury securities.

k. The department will give written consent to the owner or operator that the owner or operator may terminate the insurance policy when:

(1) An owner or operator substitutes alternate financial assurance as specified in this section; or

(2) The department releases the owner or operator from the requirements of this subsection in accordance with subsection 9.

6. **Financial test and corporate guarantee for closure and postclosure care.**

a. An owner or operator may satisfy the requirements of this section by demonstrating that the owner or operator passes a financial test as specified in this subsection. To pass this test, the owner or operator must meet the criteria of either paragraph 1 or paragraph 2.

(1) The owner or operator must have:

(a) Two of the following three ratios: A ratio of total liabilities to net worth less than two; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than one-tenth; and a ratio of current assets to current liabilities greater than one and five-tenths;

(b) Net working capital and tangible net worth each at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimate;

(c) Tangible net worth of at least ten million dollars; and

(d) Assets in the United States amounting to at least ninety percent of owner's or operator's total assets or at least six times the sum of the current closure and postclosure cost estimates, and the current plugging and abandonment cost estimates.

(2) The owner or operator must have:

(a) A current rating for the owner's or operator's most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

(b) Tangible net worth at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates;

(c) Tangible net worth of at least ten million dollars; and

(d) Assets located in the United States amounting to at least ninety percent of the owner's or operator's total assets or at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates.

b. The phrase "current closure and postclosure cost estimates" as used in subdivision a refers to the cost estimates required to be shown in paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer (subsection 6 of section 33-24-05-81). The phrase "current plugging and abandonment cost estimates" as used in subdivision a refers to the cost estimates required to be shown in paragraphs 1 through 3 of the letter from the owner's or operator's chief financial officer (40 CFR part 144.70(f)).

c. To demonstrate that the owner or operator meets the financial test, the owner or operator must submit the following items to the department:

(1) A letter signed by the owner's or operator's chief financial officer and worded as specified in subsection 6 of section 33-24-05-81;

(2) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(3) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(a) The accountant has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(b) In connection with that procedure, no matters came to the accountant's attention which caused the accountant to believe that the specified data should be adjusted.

d. An owner or operator of a new facility must submit the items specified in subdivision c to the department at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal.

e. After the initial submission of items specified in subdivision c, the owner or operator must send updated information to the department within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in subdivision c.

f. If the owner or operator no longer meets the requirements of subdivision a, the owner or operator must send notice to the department of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within ninety days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within one hundred twenty days after the end of each fiscal year.

g. The department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subdivision a, require reports of financial condition at any time from the owner or operator in addition to those specified in subdivision c. If the department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of subdivision a, the owner or operator must provide alternate financial assurance specified in this section within thirty days after notification of such a finding.

h. The department may disallow use of this test on the basis of qualification in the opinion expressed by the independent certified public accountant in the accountant's report on examination of the owner's or operator's statements (see paragraph 2 of subdivision c). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The department will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within thirty days after notification of the disallowance.

i. The owner or operator is no longer required to submit the items specified in subdivision c when:

(1) An owner or operator substitutes alternate financial assurance as specified in this section; or

(2) The department releases the owner or operator from the requirements of this subsection in accordance with subsection 9.

j. An owner or operator may meet the requirements of this section by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in

subdivisions a through h and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in subdivision a of subsection 8 of section 33-24-05-81. The certified copy of the guarantee must accompany the items sent to the department as specified in subdivision c One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

(1) If the owner or operator fails to perform final closure or postclosure, or both, of a facility covered by the corporate guarantee in accordance with the closure or postclosure, or both, plan and other permit requirements when required to do so, the guarantor will do so or establish a trust fund as specified in subsection 1 in the name of the owner or operator.

(2) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the one hundred twenty days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts.

(3) If the owner or operator fails to provide alternate financial assurance as specified in this section and fails to obtain the written approval of such alternate assurance from the department within ninety days after receipt by both the owner or operator and the department of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

k. Companies not required to submit an audited financial statement to the United States securities and exchange commission must have an auditor's opinion prepared by an auditor licensed in this state.

7. **The use of multiple financial mechanisms.** An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in this section, except that it is the combination of mechanisms, rather than the single mechanism which must provide financial assurance for an amount at least equal to the current closure or postclosure, or both, cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, the owner or operator may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The department may use any or all of the mechanisms to provide for closure or postclosure, or both, care of the facility.

8. **Use of a financial mechanism for multiple facilities.** An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the department must include a list showing for each facility the identification number, name, address, and the amount of funds for closure or postclosure, or both, care assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure or postclosure care of any of the facilities covered by the mechanism, the department may direct only the amount of

funds designated for that facility unless the owner or operator agrees to the use of additional funds available under the mechanism.

9. **Release of the owner or operator from the requirements of this section.** Within sixty days after receiving certifications from the owner or operator and a qualified professional engineer that final closure or postclosure care, or both, has been completed in accordance with an approved closure or postclosure care plan, the department will notify the owner or operator in writing that the owner or operator is no longer required by this section to maintain financial assurance for final closure or postclosure care, or both, of the facility, unless the department has reason to believe that final closure or postclosure care, or both, has not been in accordance with the approved closure or postclosure care plans. The department shall provide the owner or operator a detailed written statement of any such reason to believe that closure or postclosure, or both, has not been in accordance with the approved closure or postclosure plans.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-78. Use of a financial mechanism for both closure and postclosure care.

An owner or operator may satisfy the requirements for financial assurance for both closure and postclosure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in section 33-24-05-77. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of postclosure care.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-79. Liability requirements.

1. **Coverage for sudden accidental occurrences.** An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least one million dollars per occurrence with an annual aggregate of at least two million dollars, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in subdivision a, b, c, d, e, or f:

   a. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subdivision.

      (1) Each insurance policy must be amended by attachment of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in subsection 9 of section 33-24-05-81. The wording of the certificate of insurance must be identical to the wording specified in subsection 10 of section 33-24-05-81. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the department. If requested by the department, the owner or operator shall provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the

hazardous waste facility liability endorsement or the certificate of liability insurance to the department at least sixty days before the day on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(2) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

b. An owner or operator may meet the requirements of this subsection by passing a financial test or using the guarantee for liability coverage as specified in subsections 6 and 7.

c. An owner or operator may meet the requirements of this subsection by obtaining a letter of credit for liability coverage as specified in subsection 8.

d. An owner or operator may meet the requirements of this subsection by obtaining a surety bond for liability coverage as specified in subsection 9.

e. An owner or operator may meet the requirements of this subsection by obtaining a trust fund for liability coverage as specified in subsection 10.

f. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this subsection. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this subdivision, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurances as "excess" coverage.

g. An owner or operator shall notify the department in writing within thirty days when:

(1) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subdivisions a through f; or

(2) A certification of valid claim for bodily injury or property damages caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under subdivisions a through f; or

(3) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subdivisions a through f.

2. **Coverage for nonsudden accidental occurrences.** An owner or operator of a surface impoundment, landfill, land treatment facility, or disposal miscellaneous unit which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in

the amount of at least three million dollars per occurrence with an annual aggregate of at least six million dollars, exclusive of legal defense costs. An owner or operator who must meet the requirements of this section may combine the required per occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least four million dollars per occurrence and eight million dollars annual aggregate. This liability coverage may be demonstrated as specified in subdivision a, b, c, d, e, or f:

a. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subdivision.

   (1) Each insurance policy must be amended by attachment of the hazardous waste facility liability endorsement or evidenced by certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in subsection 9 of section 33-24-05-81. The wording of the certificate of insurance must be identical to the wording specified in subsection 10 of section 33-24-05-81. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the department. If requested by the department, the owner or operator shall provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the hazardous waste facility liability endorsement or the certificate of liability insurance to the department at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

   (2) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

b. An owner or operator may meet the requirements of this subsection by passing a financial test or using the guarantee for liability coverage as specified in subsections 6 and 7.

c. An owner or operator may meet the requirements of this subsection by obtaining a letter of credit for liability coverage as specified in subsection 8.

d. An owner or operator may meet the requirements of this subsection by obtaining a surety bond for liability coverage as specified in subsection 9.

e. An owner or operator may meet the requirements of this subsection by obtaining a trust fund for liability coverage as specified in subsection 10.

f. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amount required by this section. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this subdivision, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

g. An owner or operator shall notify the department in writing within thirty days when:

(1) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subdivisions a through f;

(2) A certification of valid claim for bodily injury or property damages caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under subdivisions a through f; or

(3) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subdivisions a through f.

3. **Request for variance.** If an owner or operator can demonstrate to the satisfaction of the department that the levels of responsibility required by subsection 1 or 2 are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the department. The request for a variance must be submitted to the department as part of the permit application under chapter 33-24-06 for a facility that does not have a permit or pursuant to the procedures for permit modification under chapter 33-24-07 for a facility that has a permit. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The department may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the department to determine a level of financial responsibility other than that required by subsection 1 or 2. Any request for a variance for a permitted facility will be treated as a request for permit modification under chapters 33-24-06 and 33-24-07.

4. **Adjustments by the department.** If the department determines that the levels of financial responsibility required by subsection 1 or 2 are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the department may adjust the level of financial responsibility required under subsection 1 or 2 as may be necessary to protect human health and the environment. This adjusted level will be based on the department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the department determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operation of a facility that is not a surface impoundment, landfill, or land treatment facility, the department may require that an owner or operator of the facility comply with subsection 2. An owner or operator shall furnish to the department within a reasonable time any information which the department requests to determine whether cause exists for such adjustments of level or type of coverage. Any adjustment of the level or type of coverage for a type of facility that has a permit will be treated as a permit modification under chapters 33-24-06 and 33-24-07.

5. **Period of coverage.** Within sixty days after receiving certifications from the owner or operator and a qualified professional engineer that final closure has been completed in accordance with the approved closure plan, the department will notify the owner or operator in writing that the owner or operator is no longer required by this section to maintain liability coverage for that facility, unless the department has reason to believe that closure has not been in accordance with the approved closure plan.

6. **Financial tests for liability coverage.**

a. An owner or operator may satisfy the requirements of this section by demonstrating that the owner or operator passes a financial test as specified in this subsection. To pass this test the owner or operator must meet the criteria of paragraph 1 or paragraph 2:

(1) The owner or operator must have:

(a) Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test;

(b) Tangible net worth of at least ten million dollars; and

(c) Assets in the United States amounting to either: (1) at least ninety percent of the owner's or operator's total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

(2) The owner or operator must have:

(a) A current rating for the owner's or operator's most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's;

(b) Tangible net worth of at least ten million dollars;

(c) Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

(d) Assets in the United States amounting to either: (1) at least ninety percent of the owner's or operator's total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

b. The phrase "amount of liability coverage" as used in subdivision a refers to the annual aggregate amounts for which coverage is required under subsections 1 and 2.

c. To demonstrate that the owner or operator meets this test, the owner or operator must submit the following three items to the department:

(1) A letter signed by the owner's or operator's chief financial officer and worded as specified in subsection 7 of section 33-24-05-81. If an owner or operator is using the financial test to demonstrate both assurance for closure or postclosure care, as specified by subsection 6 of section 33-24-05-77, and liability coverage, the owner or operator must submit the letter specified in subsection 7 of section 33-24-05-81 to cover both forms of financial responsibility; a separate letter as specified in subsection 6 of section 33-24-05-81 is not required.

(2) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

(3) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(a) The accountant has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts of such financial statements; and

(b) In connection with that procedure, no matters came to the accountant's attention which cause the accountant to believe that the specified data should be adjusted.

d. An owner or operator of a new facility must submit the items specified in subdivision c to the department at least sixty days before the date on which hazardous waste is first received for treatment, storage, or disposal.

e. After the initial submission of items specified in subdivision c, the owner or operator must send updated information to the department within ninety days after the close of each succeeding fiscal year. This information must consist of all three items specified in subdivision c.

f. If the owner or operator no longer meets the requirements of subdivision a, the owner or operator must obtain insurance, a letter of credit, a surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in this section. Evidence of liability coverage must be submitted to the department within ninety days after the end of the fiscal year for which the year-end financial data shows that the owner or operator no longer meets the test requirements.

g. The department may disallow use of this test on the basis of qualifications and the opinion expressed by the independent certified public accountant in the accountant's report on examination of the owner's or operator's financial statement (see paragraph 2 of subdivision c). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The department will evaluate other qualifications on an individual basis. The owner or operator must provide evidence of insurance for the entire amount of required liability coverage as specified in this section within thirty days after notification or disallowance.

7. **Guarantee for liability coverage.**

a. Subject to subdivision b, an owner or operator may meet the requirements of this section by obtaining a written guarantee, hereinafter referred to as "guarantee". The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in subdivisions a through f of subsection 6. The wording of the guarantee must be identical to the wording specified in subdivision b of subsection 8 of section 33-24-05-81. A certified copy of the guarantee must accompany the items sent to the department as specified in subdivision c of subsection 6. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the new guarantee.

If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of the coverage.

b. The following applies:

(1) In the case of corporations incorporated in the United States, a guarantee may be used to satisfy the requirements of this section only if the attorneys general or insurance commissioners of (a) the state in which the guarantor is incorporated, and (b) each state in which a facility covered by the guarantee is located have submitted a written statement to the department that a guarantee executed as described in this section and subdivision b of subsection 8 of section 33-24-05-81 is a legally valid and enforceable obligation in that state.

(2) In the case of corporations incorporated outside the United States, a guarantee may be used to satisfy the requirements of this section only if (a) the non-United States corporation has identified a registered agent for service of process in each state in which a facility covered by the guarantee is located and in the state in which it has its principal place of business, and (b) the attorney general or insurance commissioner of each state in which a facility covered by the guarantee is located and the state in which the guarantor corporation has its principal place of business, has submitted a written statement to the department that a guarantee executed as described in this section and subdivision b of subsection 8 of section 33-24-05-81 is a legally valid and enforceable obligation in that state.

8. **Letter of credit for liability coverage.**

a. An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit that conforms to the requirements of this subsection and submitting a copy of the letter of credit to the department.

b. The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.

c. The wording of the letter of credit must be identical to the wording specified in subsection 11 of section 33-24-05-81.

d. An owner or operator who uses a letter of credit to satisfy the requirements of this section may also establish a standby trust fund. Under the terms of such a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

e. The wording of the standby trust fund must be identical to the wording specified in subsection 14 of section 33-24-05-81.

9. **Surety bond for liability coverage.**

a. An owner or operator may satisfy the requirements of this section by obtaining a surety bond that conforms to the requirements of this subsection and submitting a copy of the bond to the department.

b. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the most recent circular 570 of the United States department of the treasury.

c. The wording of the surety bond must be identical to the wording specified in subsection 12 of section 33-24-05-81.

d. A surety bond may be used to satisfy the requirements of this section only if the attorneys general or insurance commissioners of (1) the state in which the surety is incorporated, and (2) each state in which a facility covered by the surety bond is located have submitted a written statement to the department that a surety bond executed as described in this section and in subsection 12 of section 33-24-05-81 is a legally valid and enforceable obligation in that state.

10. **Trust fund for liability coverage.**

a. An owner or operator may satisfy the requirements of this section by establishing a trust fund that conforms to the requirements of this subsection and submitting an originally signed duplicate of the trust agreement to the department.

b. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

c. The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this section. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided or obtain other financial assurance as specified in this section to cover the difference. For purposes of this subdivision, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden or nonsudden occurrences, or both, required to be provided by the owner or operator by this section, less the amounts of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

d. The wording of the trust fund must be identical to the wording specified in subsection 13 of section 33-24-05-81.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-80. Incapacity of owners or operators, guarantors, or financial institutions.

1. An owner or operator must notify the department by certified mail of the commencement of a voluntary or involuntary proceeding under United States Code title 11 (bankruptcy), naming the owner or operator as debtor within ten days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in subsection 6 of section 33-24-05-77 or in subsection 7 of section 33-24-05-79 must make such notification if the guarantor is named as debtor as required under the terms of the corporate guarantee.

2. An owner or operator who fulfills the requirements of section 33-24-05-77 or 33-24-05-79 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as a trustee, or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator shall establish other financial assurance or liability coverage within sixty days after such an event.

History: Effective January 1, 1984; amended effective December 1, 1988.

General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-81. Wording of the instruments.

1. Trust agreement and certification of acknowledgment.

   a. A trust agreement for a trust fund as specified in section 33-24-05-77 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

      TRUST AGREEMENT, the "AGREEMENT" entered into as of [date] by and between [name of the owner or operator] a [name of state] [insert "corporation", "partnership", "association", or "proprietorship"], the "GRANTOR", and [name of corporate trustee], [insert "incorporated in the state of _____" or "a national bank"], the "TRUSTEE".

      Whereas, the North Dakota State Department of Health, "DEPARTMENT" a regulatory agency of the state of North Dakota, has established certain regulations applicable to the GRANTOR requiring that an owner or operator of a hazardous waste management facility shall provide assurance that funds will be available when needed for closure or postclosure, or both, care of the facility,

      Whereas, the GRANTOR has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein,

      Whereas, the GRANTOR acting through its duly authorized officers has selected the TRUSTEE to be the TRUSTEE under this AGREEMENT and the TRUSTEE is willing to act as TRUSTEE,

      Now, therefore, the GRANTOR and the TRUSTEE agree as follows:

      Section 1. Definitions. As used in this AGREEMENT:

      (a) The term GRANTOR means the owner or operator who enters into this AGREEMENT and any successors or assigns of the GRANTOR.

      (b) The term TRUSTEE means the TRUSTEE who enters into this AGREEMENT and any successor TRUSTEE.

      Section 2. Identification of Facilities and Cost Estimate. This AGREEMENT pertains to the facilities and cost estimates identified on attached Schedule A [on Schedule A for each facility list the identification number, name, and the current closure or postclosure, or both, cost estimates or portions thereof for which financial assurance is demonstrated by this AGREEMENT].

      Section 3. Establishment of FUND. The GRANTOR and the TRUSTEE hereby establish a trust fund, the FUND, for the benefit of the DEPARTMENT. The GRANTOR and the TRUSTEE intend that no third party have access to the FUND, except as herein provided. The FUND is established initially as consisting of the property which is acceptable to the TRUSTEE and described in Schedule B attached hereto. Such property and any other property subsequently transferred to the TRUSTEE is referred to as the FUND, together with all earnings and profits thereon, less any payments or distributions made by the TRUSTEE pursuant to this AGREEMENT. The FUND must be held by the TRUSTEE, IN TRUST, as herein provided. The TRUSTEE is not responsible, nor may it undertake any responsibility for the amount or adequacy of, nor any duty to

collect from the GRANTOR any payments necessary to discharge any liabilities of the GRANTOR established by the DEPARTMENT.

Section 4. Payment for Closure and Postclosure Care. The TRUSTEE shall make payments from the FUND as the DEPARTMENT shall direct, in writing, to provide for the payment of the cost of closure, and or postclosure care of the facilities covered by this AGREEMENT. The TRUSTEE shall reimburse the GRANTOR or other persons as specified by the DEPARTMENT from the FUND for closure and postclosure expenditures in such amounts as the DEPARTMENT shall direct in writing. In addition, the TRUSTEE shall refund to the GRANTOR such amounts as the DEPARTMENT specifies in writing. Upon refund such funds no longer constitute part of the FUND as defined herein.

Section 5. Payments Comprising the FUND. Payments made to the TRUSTEE for the FUND must consist of cash or securities acceptable to the TRUSTEE.

Section 6. TRUSTEE Management. The TRUSTEE shall invest and reinvest the principal and income of the FUND and keep the FUND invested as a single FUND without distinction between principal and income in accordance with general investment policies and guidelines which the GRANTOR may communicate in writing to the TRUSTEE from time to time, subject however to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the FUND, the TRUSTEE shall discharge the trustee's duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the GRANTOR or any other owner or operator of the facilities or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), may not be acquired or held unless they are securities or other obligations of a federal or state government;

(b) The TRUSTEE is authorized to invest the FUND in time or demand deposits of the TRUSTEE, to the extent insured by an agency of the federal or state government; and

(c) The TRUSTEE is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The TRUSTEE is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the FUND to any common, commingled, or collective trust fund created by the TRUSTEE in which the FUND is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the TRUSTEE. The TRUSTEE may vote such shares in its discretion.

Section 8. Express Powers of TRUSTEE. Without, in any way, eliminating the powers and discretions conferred upon the TRUSTEE by the other provisions of this AGREEMENT or by law, the TRUSTEE is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the TRUSTEE is bound to see the application of the purchase money or to inquire into the validity or expediency of any such sale or disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the FUND in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the TRUSTEE in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a federal reserve bank, but the books and records of the TRUSTEE must at all times show that all such securities are part of the FUND;

(d) To deposit any cash in the FUND in interest-bearing accounts maintained or savings certificates issued by the TRUSTEE, in its separate capacity, or in any other banking institution affiliated with the TRUSTEE to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the FUND.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the FUND and all brokerage commissions incurred by the FUND shall be paid from the FUND. All other expenses incurred by the TRUSTEE in connection with the administration of this TRUST, including fees for legal services rendered to the TRUSTEE, the compensation of the TRUSTEE to the extent not paid directly by the GRANTOR, and all other proper charges and disbursements of the TRUSTEE, must be paid from the FUND.

Section 10. Annual Valuation. The TRUSTEE shall annually, at least thirty days prior to the anniversary date of establishment of the FUND, furnish to the GRANTOR and to the DEPARTMENT a statement confirming the value of the TRUST. Any securities in the FUND must be valued at market value as of no more than sixty days prior to the anniversary date of establishment of the FUND. The failure of the GRANTOR to object in writing to the TRUSTEE within ninety days after the statement has been furnished to the GRANTOR and the DEPARTMENT, constitutes a conclusively binding assent by the GRANTOR barring the GRANTOR from asserting any claim or liability against the TRUSTEE with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The TRUSTEE may from time to time consult with counsel, who may be counsel to the GRANTOR, with respect to any question arising as to construction of this AGREEMENT or any action to be taken hereunder. The TRUSTEE shall be fully protected to the extent permitted by law in acting upon the advice of counsel.

Section 12. TRUSTEE Compensation. The TRUSTEE is entitled to reasonable compensation for its services as agreed upon in writing from time to time with the GRANTOR.

Section 13. Successor TRUSTEE. The TRUSTEE may resign or the GRANTOR may replace the TRUSTEE, but such resignation or replacement is not effective until the GRANTOR has appointed a successor TRUSTEE and this successor accepts the appointment. The successor TRUSTEE shall have the same powers and duties as those conferred upon the TRUSTEE hereunder. Upon the successor TRUSTEE'S acceptance of the appointment, the TRUSTEE shall assign, transfer, and pay over to the successor TRUSTEE the funds and properties then constituting the FUND. If for any reason, the GRANTOR cannot or does not act in the event of the resignation of the TRUSTEE, the TRUSTEE may apply to a court of competent jurisdiction for the appointment of a successor TRUSTEE or for instructions. The successor TRUSTEE shall specify the date on which it assumes administration of the TRUST in a writing sent to the GRANTOR, the DEPARTMENT, and the present TRUSTEE by certified mail ten days before such change becomes effective. Any expenses incurred by the TRUSTEE as a result of any of the acts contemplated by this section must be paid as provided in section 9.

Section 14. Instructions to the TRUSTEE. All orders, requests, and instructions by the GRANTOR to the TRUSTEE must be in writing, signed by such persons as are designated in the attached Exhibit A, or such other designees as the GRANTOR may designate by amendment to Exhibit A. The TRUSTEE shall be fully protected in acting without inquiry in accordance with the GRANTOR'S orders, requests, and instructions. All orders, requests, and instructions by the DEPARTMENT to the TRUSTEE must be in writing, signed by an authorized DEPARTMENT representative and the TRUSTEE shall act and be fully protected in acting in accordance with such orders, requests, and instructions. The TRUSTEE shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the GRANTOR or the DEPARTMENT hereunder has occurred. The TRUSTEE shall have no duty to act in the absence of such orders, requests, and instructions from the GRANTOR or the DEPARTMENT, or both, except as provided for herein.

Section 15. Notice of Nonpayment. The TRUSTEE shall notify the GRANTOR and the DEPARTMENT by certified mail within ten days following the expiration of the thirty-day period after the anniversary of the establishment of the TRUST if no payment is received from the GRANTOR during that period. After the pay-in period is completed, the TRUSTEE is not required to send a notice of nonpayment.

Section 16. Amendment of AGREEMENT. This AGREEMENT may be amended by an instrument in writing executed by the GRANTOR, the TRUSTEE and the DEPARTMENT, or by the TRUSTEE and the DEPARTMENT, if the GRANTOR ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this AGREEMENT as provided in section 16, this TRUST is irrevocable and continues until terminated at the written AGREEMENT of the GRANTOR, the TRUSTEE, and the DEPARTMENT, or by the TRUSTEE and the DEPARTMENT, if the GRANTOR ceases to exist. Upon termination of the TRUST, all remaining trust property, less final trust administration expenses, must be delivered to the GRANTOR.

Section 18. Immunity and Indemnification. The TRUSTEE may not incur personal liability of any nature in connection with any act or omission made in good faith in the administration of this TRUST or in carrying out any directions by the GRANTOR or the DEPARTMENT issued in accordance with this AGREEMENT. The TRUSTEE must be

indemnified and saved harmless by the GRANTOR or from the trust fund, or both, from and against any personal liability to which the TRUSTEE may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the GRANTOR fails to provide such defense.

Section 19. Choice of Law. This AGREEMENT must be administered, construed, and enforced according to the laws of the state of North Dakota.

Section 20. Interpretation. As used in this AGREEMENT, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this AGREEMENT do not affect the interpretation or the legal efficacy of this AGREEMENT.

In Witness Whereof the parties have caused this AGREEMENT to be executed by their respective officers duly authorized and their corporate seals to be hereunto fixed and attested as of the date first above written: The parties below certify that the wording of this AGREEMENT is identical to the wording specified in subdivision a of subsection 1 of North Dakota Administrative Code section 33-24-05-81 as such regulation was constituted on the date first above written.

[Signature of GRANTOR]

[Title]

[Attest:]

[Title]

[Seal]

[Signature of TRUSTEE]

[Attest:]

[Title]

[Seal]

b. The following is an example of the certification of acknowledgment which must accompany the TRUST AGREEMENT for a trust fund as specified in subsection 1 of section 33-24-05-77.

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of notary public]

2. A surety bond guaranteeing payment into a trust fund as specified in subsection 2 of section 33-24-05-77 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

FINANCIAL GUARANTEE BOND

Date bond executed: _____

Effective date: _____

Principal: [legal name and business address of owner or operator]

Type of organization: [insert "individual", "joint venture", "partnership", or "corporation"]

State of incorporation: _____

Surety(ies): [name(s) and business address(es)]

Identification number, name, address, and closure or postclosure, or both, amount for each facility guaranteed by this bond [indicate closure and postclosure amounts separately]: _____

Total penal sum of bond: $_____

Surety's bond number: _____

Know all persons by these presents that we the PRINCIPAL and SURETY(IES) hereto are firmly bound to the North Dakota State Department of Health (hereinafter called the DEPARTMENT) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assignors jointly and severally: provided that where the SURETY(IES) are corporations acting as cosureties, we, the SURETIES, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each SURETY binds itself, jointly and severally with the PRINCIPAL, for the payment of such sum only as is set forth opposite the name of such SURETY, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said PRINCIPAL is required under North Dakota Century Code chapter 23-20.3 to have a permit in order to own or operate each hazardous waste management facility identified above, and

Whereas said PRINCIPAL is required to provide financial assurance for closure or closure and postclosure care as a condition of the permit, and

Whereas said PRINCIPAL shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of the obligation are such that if the PRINCIPAL shall faithfully, before the beginning of final closure of each facility identified above, fund the standby trust fund in the amounts identified above for the facility,

Or, if the PRINCIPAL shall fund the standby trust fund in such amounts within fifteen days after an order to begin closure is issued by the DEPARTMENT or a state or other court of competent jurisdiction,

Or, if the PRINCIPAL shall provide alternate financial assurance as specified in North Dakota Administrative Code chapter 33-24-05, as applicable, and obtain the DEPARTMENT'S written approval of such assurance within ninety days after the date of notice of cancellation is received by both the PRINCIPAL and the DEPARTMENT from the SURETY(IES), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The SURETY(IES) shall become liable on this bond obligation only when the PRINCIPAL has failed to fulfill the conditions described above. Upon notification by the DEPARTMENT that the PRINCIPAL has failed to perform as guaranteed by this bond, the SURETY(IES) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the DEPARTMENT.

The liability of the SURETY(IES) shall not be discharged by any payment or any succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the SURETY(IES) hereunder exceed the amount of said penal sum.

The SURETY(IES) may cancel the bond by sending notice of cancellation by certified mail to the PRINCIPAL and to the DEPARTMENT, provided, however, that cancellation shall not occur during the one hundred twenty days beginning on the date of receipt of the notice of cancellation by both the PRINCIPAL and the DEPARTMENT as evidenced by the return receipts.

The PRINCIPAL may terminate this bond by sending written notice to the SURETY(IES) provided, however, that no such notice shall become effective until the SURETY(IES) receive(s) written authorization for termination of the bond by the DEPARTMENT.

[The following paragraph is an optional rider that may be included, but is not required]

The PRINCIPAL and SURETY(IES) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure or postclosure, or both, amount, provided that the penal sum does not increase by more than twenty percent in any one year, and no decrease in the penal sum takes place without the written permission of the DEPARTMENT.

In witness whereof, the PRINCIPAL and SURETY(IES) have executed this financial guarantee bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the PRINCIPAL and SURETY(IES) and that the wording of this surety bond is identical to the wording specified in subsection 2 of North Dakota Administrative Code section 33-24-05-81 as such rule was constituted on the date this bond was executed.

PRINCIPAL
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

CORPORATE SURETY(IES)
[Name and address]
State of Incorporation: _____
Liability limit: $ _____
[Signature(s)]
[Name(s) and Title(s)]
[Corporate seal]
[For every cosurety, provide signature(s), corporate seal, and other information in the same manner as for surety above.]

Bond premium: $ _____

3. A surety bond guaranteeing performance of closure or postclosure care as specified in subsection 3 of section 33-24-05-77 must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed: _____

Effective Date: _____

PRINCIPAL: [Legal name and business address of owner or operator]

Type of organization: [Insert "Individual", "joint venture", "partnership", or "corporation"]

State of incorporation: _____

SURETY(IES): [Name(s) and business address(es)]

_____

Identification number, name, address and closure or postclosure, or both, amount(s) for each facility guaranteed by this bond.

[Indicate closure and postclosure amount separately]:

_____

Total penal sum of bond: _____

Surety's bond number: _____

Know all persons by these presents, that we the PRINCIPAL and SURETY(IES) hereto are firmly bound to the North Dakota State Department of Health (hereinafter called the DEPARTMENT), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns jointly and severally: Provided that, where the SURETY(IES) are corporations acting as cosureties, we the SURETIES bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us and for all other purposes each SURETY binds itself jointly and severally with the PRINCIPAL for the payment of such sum only as is set forth opposite the name of each SURETY, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said PRINCIPAL is required under North Dakota Century Code chapter 23-20.3 to have a permit to own or operate each hazardous waste management facility identified above, and

Whereas said PRINCIPAL is required to provide financial assurance for closure, or closure and postclosure care as a condition of the permit, and

Whereas said PRINCIPAL shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of this obligation are that if the PRINCIPAL shall faithfully perform closure, when required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit as such plan and permit may be amended pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended.

And if the PRINCIPAL shall faithfully perform postclosure care of each facility for which this bond guarantees postclosure care, in accordance with the postclosure plan and other requirements of the permit as such plan and permit may be amended pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the PRINCIPAL shall provide alternate financial assurance as specified in North Dakota Administrative Code chapter 33-24-05 and obtain the DEPARTMENT'S written approval of such assurance within ninety days after the date notice of cancellation is received by both the PRINCIPAL and the DEPARTMENT from the SURETY(IES) then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The SURETY(IES) shall become liable on this bond obligation only when the PRINCIPAL has failed to fulfill the conditions described above.

Upon notification by the DEPARTMENT that the PRINCIPAL has been found in violation of the closure requirements of North Dakota Administrative Code chapter 33-24-05 for a facility for which this bond guarantees performance of closure, the SURETY(IES) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amount guaranteed for the facility into the standby trust fund as directed by the DEPARTMENT.

Upon notification by the DEPARTMENT that the PRINCIPAL has been found in violation of the postclosure requirements of North Dakota Administrative Code chapter 33-24-05 for a facility for which this bond guarantees performance of postclosure care, the SURETY(IES) shall either perform postclosure care in accordance with the postclosure plan and other permit requirements or place the postclosure amount guaranteed for the facility into a standby trust fund as directed by the DEPARTMENT.

Upon notification by the DEPARTMENT that the PRINCIPAL has failed to provide alternate financial assurance as specified in North Dakota Administrative Code chapter 33-24-05 and obtain written approval of such assurance from the DEPARTMENT during the ninety days following receipt by both the PRINCIPAL and the DEPARTMENT of a notice of cancellation of the bond, the SURETY(IES) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the DEPARTMENT.

The SURETY(IES) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agree(s) that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the SURETY(IES) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the SURETY(IES) hereunder exceed the amount of said penal sum.

The SURETY(IES) may cancel the bond by sending the notice of cancellation by certified mail to the PRINCIPAL and to the DEPARTMENT, provided, however, that cancellation shall not occur during the one hundred twenty days beginning on the date of receipt of the notice of cancellation by both the PRINCIPAL and the DEPARTMENT as evidenced by the return receipts.

The PRINCIPAL may terminate this bond by sending written notice to the SURETY(IES) provided, however, that no such notice shall become effective until the SURETY(IES) receive(s) written authorization for termination of the bond by the DEPARTMENT.

[The following paragraph is an optional rider that may be included, but is not required].

PRINCIPAL and SURETY(IES) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure or postclosure, or both, amount, provided that the penal sum does not increase by more than twenty percent in any one year, and no decrease in the penal sum takes place without the written permission of the DEPARTMENT.

In Witness Whereof, the PRINCIPAL and SURETY(IES) have executed this performance bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the PRINCIPAL and the SURETY(IES) and that the wording of this surety bond is identical to the wording specified in subsection 3 of North Dakota Administrative Code section 33-24-05-81 as such rule was constituted on the date this bond was executed.

PRINCIPAL
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate Seal]

[CORPORATE SURETY(IES)]
[Name and Address]
State of Incorporation: _____
Liability Limit: $ _____
[Signature(s)]
[Name(s) and Title(s)]
Corporate Seal:
[For every cosurety, provide signature(s), corporate seal, and other information in the same manner as for surety above.]

Bond Premium: $ _____

4. A letter of credit as specified in subsection 4 of section 33-24-05-77 must be worded as follows except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

IRREVOCABLE STANDBY LETTER OF CREDIT

Chief, Environmental Health Section North Dakota State Department of Health

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit Number _____ in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] United States Dollars $ _____, available upon presentation by you of

(1) You sight draft bearing reference to this letter of credit number _____, and

(2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of North Dakota Century Code chapter 23-20.3".

This letter of credit is effective as of [date] and shall expire on [date] at least one year later, but such expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least one hundred twenty days before the current expiration date, we notify both you and [owner's or

operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for one hundred twenty days after the date of receipt by both you and [owner's or operator's name], as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in subsection 4 of North Dakota Administrative Code section 33-24-05-81 as such rule was constituted on the date shown immediately below.

[Signature(s) and Title(s) of Official(s) of issuing institution] [Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce", or "the Uniform Commercial Code"]

5. A certificate of insurance as specified in subsection 5 of section 33-24-05-77 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

CERTIFICATE OF INSURANCE FOR CLOSURE OR POSTCLOSURE CARE

Name and address of Insurer (hereinafter called the "INSURER"):

_____

Name and address of Insured (hereinafter called the "INSURED"):

_____

Facilities covered: [List for each facility: the identification number, name, address and amount of insurance for closure or the amount for postclosure care, or both. (These amounts for all facilities covered must cover the face amount shown below.)]

Face amount: _____

Policy Number: _____

Effective Date: _____

The INSURER hereby certifies that it has issued to the INSURED the policy of insurance identified above to provide financial assurance for [insert "closure" or "closure and postclosure care" or "postclosure care"] for the facilities identified above. The INSURER further warrants that such policy conforms in all respects with the requirements of subsection 5 of North Dakota Administrative Code section 33-24-05-77, as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such rules is hereby amended to eliminate such inconsistency.

Whenever requested by the North Dakota State Department of Health (DEPARTMENT) the INSURER agrees to furnish to the DEPARTMENT a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in subsection 5 of North Dakota Administrative Code section 33-24-05-81 as such rule was constituted on the date shown immediately below.

[Authorized signature for INSURER]

[Name of person signing]

[Title of person signing]

Signature of witness or notary: _____

[Date]

6. A letter from the chief financial officer, as specified in subsection 6 of section 33-24-05-77, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Letter from Chief Financial Officer

[Address to North Dakota State Department of Health].

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for closure and/or postclosure costs, as specified in sections 33-24-05-74 through 33-24-05-88.

[Fill out the following five paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its identification number, name, address, and current closure and/or postclosure cost estimates. Identify each cost estimate as to whether it is for closure or postclosure care].

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or postclosure care is demonstrated through the financial test specified in sections 33-24-05-74 through 33-24-05-88. The current closure and/or postclosure cost estimates covered by the test are shown for each facility: _____.

2. This firm guarantees, through the guarantee specified in sections 33-24-05-74 through 33-24-05-88, the closure or postclosure care of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or postclosure care so guaranteed are shown for each facility: _____. The firm identified above is [insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee _____; or (3) engaged in the following substantial business relationship with the owner or operator _____, and receiving the following value in consideration of this guarantee _____]. [Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter].

3. In states where the environmental protection agency is not administering the financial requirements of subpart H of 40 CFR part 264 or 265, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or postclosure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in sections 33-24-05-74 through 33-24-05-88. The current closure and/or postclosure cost estimates covered by such a test are shown for each facility: _____.

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, postclosure care, is not demonstrated to the DEPARTMENT through the financial test or any other financial assurance mechanism specified in sections 33-24-05-74 through 33-24-05-88 or equivalent or substantially equivalent state mechanisms. The current closure and/or postclosure cost estimates not covered by such financial assurance are shown for each facility: _____.

5. This firm is the owner or operator of the following underground injective control facilities for which financial assurance for plugging and abandonment is required under 40 CFR part 144. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: _____.

This firm [insert "is required" or "is not required"] to file a form 10K with the securities and exchange commission for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Fill in Alternative I if the criteria of paragraph 1 of subdivision a of subsection 6 of section 33-24-05-77 are used. Fill in Alternative II if the criteria of paragraph 2 of subdivision a of subsection 6 of section 33-24-05-77 are used.]

Alternative I

1.	Sum of current closure and postclosure cost estimate (total of all cost estimates shown in the five paragraphs above).	$ _____
*2.	Total liabilities (if any portion of the closure or postclosure cost estimate is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4).	$ _____
*3.	Tangible net worth.	$ _____
*4.	Net worth.	$ _____
*5.	Current assets.	$ _____
*6.	Current liabilities.	$ _____
7.	Net working capital (line 5 minus line 6).	$ _____
*8.	The sum of net income plus depreciation, depletion, and amortization.	$ _____
*9.	Total assets in United States (required only if less than 90% of firm's assets are located in the United States).	$ _____

		Yes	No
10.	Is line 3 at least $10 million?	_____	_____
11.	Is line 3 at least 6 times line 1?	_____	_____
12.	Is line 7 at least 6 times line 1?	_____	_____
*13.	Are at least 90% of firm's assets located in the United States? If not, complete line 14.	_____	_____

14. Is line 9 at least 6 times line 1?	_____	_____
15. Is line 2 divided by line 4 less than 2.0?	_____	_____
16. Is line 8 divided by line 2 greater than 0.1?	_____	_____
17. Is line 5 divided by line 6 greater than 1.5?	_____	_____

Alternative II

1. Sum of current closure and postclosure cost estimates (total of all cost estimates shown in the five paragraphs above).	$ _____
2. Current bond rating of most recent issuance of this firm and name of rating service.	$ _____
3. Date of issuance of bond.	$ _____
4. Date of maturity of bond.	$ _____
*5. Tangible net worth (if any portion of the closure and postclosure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line).	$ _____
*6. Total assets in United States (required only if less than 90% of firm's assets are located in the United States).	$ _____

	Yes	No
7. Is line 5 at least $10 million?	_____	_____
8. Is line 5 at least 6 times line 1?	_____	_____
*9. Are at least 90% of firm's assets located in the United States? If not, complete line 10.	_____	_____
10. Is line 6 at least 6 times line 1?	_____	_____

I hereby certify that the wording of this letter is identical to the wording specified in subsection 6 of section 33-24-05-81 as such regulations were constituted on the date shown immediately below.

[Signature] _____

[Name] _____

[Title] _____

[Date] _____

7. A letter from the chief financial officer, as specified in subsection 6 of section 33-24-05-79, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

Letter from Chief Financial Officer:

[Address to North Dakota State Department of Health].

I am the chief financial officer of [firm's name and address]. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage [insert "and closure and/or postclosure care" if applicable] as specified in sections 33-24-05-74 through 33-24-05-88.

[Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its identification number, name, and address.]

The firm identified above is the owner or operator of the following facilities for which liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences is being demonstrated through the financial test specified in sections 33-24-05-74 through 33-24-05-88:

The firm identified above guarantees, through the guarantee specified in sections 33-24-05-74 through 33-24-05-88, liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences at the following facilities owned or operated by the following: _____. The firm identified above is [insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee _____; or (3) engaged in the following substantial business relationship with the owner or operator _____, and receiving the following value in consideration of this guarantee _____]. [Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.]

[If you are using the financial test to demonstrate coverage of both liability and closure and postclosure care, fill in the following five paragraphs regarding facilities and associated closure and postclosure cost estimates. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its identification number, name, address, and current closure and/or postclosure cost estimates. Identify each cost estimate as to whether it is for closure or postclosure care.]

1. The firm identified above owns or operates the following facilities for which financial assurance for closure or postclosure care or liability coverage is demonstrated through the financial test specified in sections 33-24-05-74 through 33-24-05-88. The current closure and postclosure cost estimates covered by the test are shown for each facility: _____.

2. The firm identified above guarantees, through the guarantee specified in sections 33-24-05-74 through 33-24-05-88, the closure and postclosure care or liability coverage of the following facilities owned or operated by the guaranteed party. The current cost estimates for closure or postclosure care so guaranteed are shown for each facility: _____.

3. In states where the environmental protection agency is not administering the financial requirements of subpart H of 40 CFR parts 264 and 265, this firm is demonstrating financial assurance for the closure or postclosure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in subpart H of 40 CFR parts 264 and 265. The current closure or postclosure cost estimates covered by such a test are shown for each facility: _____.

4. The firm identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, postclosure care, is not demonstrated to the DEPARTMENT through the financial test or any other financial assurance mechanisms specified in sections 33-24-05-74 through 33-24-05-88 or equivalent or substantially equivalent state mechanisms. The current closure and/or postclosure cost estimates not covered by such financial assurance are shown for each facility: _____.

5. This firm is the owner or operator or guarantor of the following underground injective control facilities for which financial assurance for plugging and abandonment is required under 40 CFR part 144 and is assured through a financial test. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: _____.

This firm [insert "is required" or "is not required"] to file a form 10K with the securities and exchange commission for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

Part A. Liability Coverage for Accidental Occurrences

[Fill in Alternative I if the criteria of paragraph 1 of subdivision a of subsection 6 of section 33-24-05-79 are used. Fill in Alternative II if the criteria of paragraph 2 of subdivision a of subsection 6 of section 33-24-05-79 are used.]

Alternative I

1. Amount of annual aggregate liability coverage to be demonstrated.	$	
*2. Current assets.	$	
*3. Current liabilities.	$	
4. Net working capital (line 2 minus line 3).	$	
*5. Tangible net worth.	$	
*6. If less than 90% of assets are located in the United States, give total United States assets.	$	
	Yes	No
7. Is line 5 at least $10 million?	_____	_____
8. Is line 4 at least 6 times line 1?	_____	_____
9. Is line 5 at least 6 times line 1?	_____	_____
*10. Are at least 90% of assets located in the United States? If not, complete line 11.	_____	_____
11. Is line 6 at least 6 times line 1?	_____	_____

Alternative II

1. Amount of annual aggregate liability coverage to be demonstrated.	$
2. Current bond rating of most recent issuance and name of rating service.	
3. Date of issuance of bond.	
4. Date of maturity of bond.	
*5. Tangible net worth.	$
*6. Total assets in United States (required only if less than	$

90% of assets are located in the United States). _____

	Yes	No
7. Is line 5 at least $10 million?	_____	_____
8. Is line 5 at least 6 times line 1?	_____	_____
9. Are at least 90% of assets located in the United States? If not, complete line 10.	_____	_____
10. Is line 6 at least 6 times line 1?	_____	_____

[Fill in part B if you are using the financial test to demonstrate assurance of both liability coverage and closure or postclosure care.]

Part B. Closure or Postclosure Care and Liability Coverage

[Fill in Alternative I if the criteria of paragraph 1 of subdivision a of subsection 6 of section 33-24-05-77 and paragraph 1 of subdivision a of subsection 6 of section 33-24-05-79 are used. Fill in Alternative II if the criteria of paragraph 2 of subdivision a of subsection 6 of section 33-24-05-77 and paragraph 2 of subdivision a of subsection 6 of section 33-24-05-79 are used.]

Alternative I

1. Sum of current closure and postclosure cost estimates (total of all cost estimates listed above).	$ _____
2. Amount of annual aggregate liability coverage to be demonstrated.	$ _____
3. Sum of lines 1 and 2.	$ _____
*4. Total liabilities (if any portion of your closure or postclosure cost estimates is included in your total liabilities, you may deduct that portion from this line and add that amount to lines 5 and 6).	$ _____
*5. Tangible net worth.	$ _____
*6. Net worth.	$ _____
*7. Current assets.	$ _____
*8. Current liabilities.	$ _____
9. Net working capital (line 7 minus line 8).	$ _____
*10. The sum of net income plus depreciation, depletion, and amortization.	$ _____
*11. Total assets in United States (required only if less than 90% of assets are located in the United States).	$ _____

	Yes	No
12. Is line 5 at least $10 million?	_____	_____
13. Is line 5 at least 6 times line 3?	_____	_____

14. Is line 9 at least 6 times line 3?	_____	_____
*15. Are at least 90% of assets located in the United States? If not, complete line 16.	_____	_____
16. Is line 11 at least 6 times line 3?	_____	_____
17. Is line 4 divided by line 6 less than 2.0?	_____	_____
18. Is line 10 divided by line 4 greater than 0.1?	_____	_____
19. Is line 7 divided by line 8 greater than 1.5?	_____	_____

Alternative II

1. Sum of current closure and postclosure cost estimates (total of all cost estimates listed above).	$ _____
2. Amount of annual aggregate liability coverage to be demonstrated.	$ _____
3. Sum of lines 1 and 2.	$ _____
4. Current bond rating of most recent issuance and name of rating service.	_____
5. Date of issuance of bond.	_____
6. Date of maturity of bond.	_____
*7. Tangible net worth (if any portion of the closure or postclosure cost estimates is included in "total liabilities" on your financial statements you may add that portion to this line).	$ _____
*8. Total assets in the United States (required only if less than 90% of assets are located in the United States).	$ _____

	Yes	No
9. Is line 7 at least $10 million?	_____	_____
10. Is line 7 at least 6 times line 3?	_____	_____
*11. Are at least 90% of assets located in the United States? If not, complete line 12.	_____	_____
12. Is line 8 at least 6 times line 3?	_____	_____

I hereby certify that the wording of this letter is identical to the wording specified in subsection 7 of section 33-24-05-81 as such regulations were constituted on the date shown immediately below.

[Signature] _____

[Name] _____

[Title] _____

[Date] _____

8. Corporate Guarantee

a. A corporate guarantee, as specified in subsection 6 of section 33-24-05-77, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Corporate Guarantee for Closure or Postclosure Care

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the state of [insert name of state], herein referred to as guarantor. This guarantee is made on behalf of the [owner or operator] of [business address], which is [one of the following: "our subsidiary"; "a subsidiary of [name and address of common parent corporation], of which guarantor is a subsidiary"; or "an entity with which guarantor has a substantial business relationship, as defined in subsection 8 of section 33-24-05-75 to the DEPARTMENT.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in subsection 6 of section 33-24-05-77.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: identification number, name, and address. Indicate for each whether guarantee is for closure, postclosure care, or both.]

3. "Closure plans" and "postclosure plans" as used below refer to the plans maintained as required by sections 33-24-05-59 through 33-24-05-73 for the closure and postclosure care of facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to the DEPARTMENT that in the event that [owner or operator] fails to perform [insert "closure", "postclosure care", or "closure and postclosure care"] of the above facility(ies) in accordance with the closure or postclosure plans and other permit or interim status requirements when required to do so, the guarantor shall do so or establish a trust fund as specified in sections 33-24-05-74 through 33-24-05-88, as applicable, in the name of [owner or operator] in the amount of the current closure or postclosure cost estimates as specified in sections 33-24-05-74 through 33-24-05-88.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within ninety days, by certified mail, notice to the DEPARTMENT and to [owner or operator] that the guarantor intends to provide alternate financial assurance as specified in sections 33-24-05-74 through 33-24-05-88, as applicable, in the name of [owner or operator]. Within one hundred twenty days after the end of such fiscal year, the guarantor shall establish such financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the DEPARTMENT by certified mail, of a voluntary or involuntary proceeding under title 11 (Bankruptcy), United States Code, naming guarantor as debtor, within ten days after commencement of the proceeding.

7. Guarantor agrees that within thirty days after being notified by the DEPARTMENT of a determination that guarantor no longer meets the financial test criteria or that the guarantor is disallowed from continuing as a guarantor of closure or postclosure care, the guarantor shall establish alternate financial assurance as specified in sections 33-24-05-74 through 33-24-05-88, as applicable, in the name of [owner or operator] unless [owner or operator] has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or postclosure plan, amendment or

modification of the permit, the extension or reduction of the time of performance of closure or postclosure, or any other modification or alteration of an obligation of the owner or operator pursuant to sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819.

9. Guarantor agrees to remain bound under this guarantee for as long as [owner or operator] must comply with the applicable financial assurance requirements of sections 33-24-05-74 through 33-24-05-88 for the above-listed facilities, except as provided in paragraph 10 of this AGREEMENT.

10. [Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator]:

Guarantor may terminate this guarantee by sending notice by certified mail to the DEPARTMENT and to [owner or operator], provided that this guarantee may not be terminated unless and until [the owner or operator] obtains, and the DEPARTMENT approves, alternate closure and/or postclosure care coverage complying with section 33-24-05-77.

[Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with its owner or operator.]

Guarantor may terminate this guarantee one hundred twenty days following the receipt of notification, through certified mail, by the DEPARTMENT and by [the owner or operator] obtains, and the DEPARTMENT approves, alternate closure or postclosure, or both, care coverage complying with section 33-24-05-77 or 33-24-05-78 or both.

[Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with its owner or operator.]

Guarantor may terminate this guarantee one hundred twenty days following the receipt of notification, through certified mail, by the DEPARTMENT and by the [owner or operator].

11. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in sections 33-24-05-74 through 33-24-05-88, as applicable, and obtain written approval of such assurance from the DEPARTMENT within ninety days after a notice of cancellation by the guarantor is received by the DEPARTMENT from guarantor, guarantor shall provide such alternate financial assurance in the name of [owner or operator].

12. Guarantor expressly waives notice of acceptance of this guarantee by the DEPARTMENT or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the closure and/or postclosure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in subsection 8 of section 33-24-05-81 as such regulations were constituted on the date first above written.

Effective date: _____

[Name of guarantor] _____

[Authorized signature for guarantor] _____

[Name of person signing] _____

[Title of person signing] _____

Signature of witness or notary: _____

b. A guarantee, as specified in subsection 7 of section 33-24-05-79, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Guarantee for Liability Coverage

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of [if incorporated within the United States insert "the state of _____" and insert name of state; if incorporated outside the United States insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the state of the principal place of business], herein referred to as guarantor. This guarantee is made on behalf of [owner or operator] of [business address], which is one of the following: "our subsidiary"; "a subsidiary of [name and address of common parent corporation], of which guarantor is a subsidiary"; or "an entity with which guarantor has a substantial business relationship, as defined in subsection 8 of section 33-24-05-75", to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in subsection 7 of section 33-24-05-79.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: identification number, name, and address; and if guarantor is incorporated outside the United States list the name and address of the guarantor's registered agent in each state.] This corporate guarantee satisfies Resource Conservation Recovery Act third-party liability requirements for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences in above-named owner or operator facilities for coverage in the amount of [insert dollar amount] for each occurrence and [insert dollar amount] annual aggregate.

3. For value received from [owner or operator], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [sudden and/or nonsudden] accidental occurrences, arising from the operation of the above-named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage identified above.

4. Such obligation does not apply to any of the following:

(a) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert owner or operator] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator]; or

(2) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert owner or operator]. This exclusion applies:

(A) Whether [insert owner or operator] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert owner or operator];

(2) Premises that are sold, given away, or abandoned by [insert owner or operator] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert owner or operator];

(4) Personal property in the care, custody, or control of [insert owner or operator];

(5) That particular part of real property on which [insert owner or operator] or any contractors or subcontractors working directly or indirectly on behalf of [insert owner or operator] are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within ninety days, by certified mail, notice to the DEPARTMENT and to [owner or operator] that the guarantor intends to provide alternate liability coverage as specified in section 33-24-05-79, as applicable, in the name of [owner or operator]. Within one hundred twenty days after the end of such fiscal year, the guarantor shall establish such liability coverage unless [owner or operator] has done so.

6. The guarantor agrees to notify the DEPARTMENT by certified mail of a voluntary or involuntary proceeding under title 11 (Bankruptcy), United States Code, naming guarantor as debtor, within ten days after commencement of the proceeding.

7. Guarantor agrees that within thirty days after being notified by the DEPARTMENT of a determination that guarantor no longer meets the financial test criteria or that the guarantor is disallowed from continuing as a guarantor, the guarantor shall establish alternate liability coverage as specified in section 33-24-05-79 in the name of [owner or operator], unless [owner or operator] has done so.

8. Guarantor reserves the right to modify this AGREEMENT to take into account amendment or modification of the liability requirements set by section 33-24-05-79, provided that such modification shall become effective only if the DEPARTMENT does not disapprove the modification within thirty days of receipt of notification of the modification.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable requirements of section 33-24-05-79 for the above-listed facility(ies), except as provided in paragraph 10 of this AGREEMENT.

10. [Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator]:

Guarantor may terminate this guarantee by sending notice by certified mail to the DEPARTMENT and to [owner or operator], provided that this guarantee may not be terminated unless and until [the owner or operator] obtains, and the DEPARTMENT approves, alternate liability coverage complying with section 33-24-05-79.

[Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with the owner or operator]:

Guarantor may terminate this guarantee one hundred twenty days following receipt of notification, through certified mail, by the DEPARTMENT and by [the owner or operator].

11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

13. The guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents:

(a) Certification from the principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $_____.

[Signatures] _____
Principal _____
(Notary) Date _____
[Signatures] _____
Claimant(s) _____
(Notary) Date _____

(b) A valid final court order establishing a judgment against the principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the principal's facility or group of facilities.

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered [insert "primary" or "excess"] coverage.

I hereby certify that the wording of the guarantee is identical to the wording specified in subdivision b of subsection 8 of section 33-24-05-81 as such regulations were constituted on the date shown immediately below.

Effective date: _____
[Name of guarantor] _____
[Authorized signature for guarantor] _____
[Name of person signing] _____
[Title of person signing] _____
Signature of witness or notary: _____

9. A hazardous waste facility liability endorsement as required in section 33-24-05-79 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

HAZARDOUS WASTE FACILITY LIABILITY ENDORSEMENT

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under North Dakota Administrative Code section 33-24-05-79. The coverage applies at [list identification number, name, and address for each facility] for [insert "sudden accidental occurrences", "nonsudden accidental occurrences", or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the insurer's liability] exclusive of legal defense costs.

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with subsections (a) through (e) of this paragraph 2 are hereby amended to conform with subsections (a) through (e):

   (a) Bankruptcy or insolvency of the insured shall not relieve the insurer of its obligations under the policy to which this endorsement is attached.

   (b) The insurer is liable for the payment of amounts within any deductible applicable to this policy with a right of reimbursement by the insured for any such payment made by the insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in subsection 6 of North Dakota Administrative Code section 33-24-05-79.

   (c) When requested by the North Dakota State Department of Health (DEPARTMENT), the insurer agrees to furnish to the DEPARTMENT a signed duplicate original of the policy and all endorsements.

   (d) Cancellation of this endorsement, whether by the insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the DEPARTMENT.

   (e) Any other termination of this endorsement will be effective only upon written notice, and only after the expiration of thirty days after a copy of such written notice is received by the DEPARTMENT, as evidenced by the return receipt.

   Attached to and forming part of policy number _____ issued by [name of insurer] herein called the insurer of [address of insurer] to [name of insured] of [address] this _____ day of _____, 20____. The effective date of said policy is _____ day of _____, 20____.

   I hereby certify that the wording of this endorsement is identical to the wording specified in subsection 9 of North Dakota Administrative Code section 33-24-05-81, as such rule was constituted on the date first above written, and that the insurer is

licensed to transact the business of insurance in the state of North Dakota or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

[Signature of authorized representative of insurer]

[Type name]

[Title], authorized representative of [name of insurer]

[Address of representative]

10. A certificate of liability insurance as required in section 33-24-05-79 must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. [Name of insurer, (the "insurer") of [address of insurer] hereby certifies that it has issued liability insurance covering bodily injury and property damage to [name of insured], (the "insured"), of [address of insured] in connection with the insured's obligation to demonstrate financial responsibility under North Dakota Administrative Code section 33-24-05-79. The coverage applies at [list identification number, name, and address for each facility] for [insert "sudden accidental occurrences", "nonsudden accidental occurrences", or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the insurer's liability], exclusive of legal defense costs. The coverage is provided under policy number _____, issued on [date] the effective date of said policy is [date].

2. The insurer further certifies the following with respect to the insurance described in paragraph 1:

   (a) Bankruptcy or insolvency of the insured shall not relieve the insurer of its obligations under the policy.

   (b) The insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in subsection 6 of North Dakota Administrative Code section 33-24-05-79.

   (c) When requested by the North Dakota State Department of Health (DEPARTMENT), the insurer agrees to furnish to the DEPARTMENT a signed duplicate original of the policy and all endorsements.

   (d) Cancellation of the insurance, whether by the insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice, and only after the expiration of sixty days after a copy of such written notice is received by the DEPARTMENT.

   (e) Any other termination of the insurance will be effective only upon written notice, and only after the expiration of thirty days after a copy of such written notice is received by the DEPARTMENT, as evidenced by the return receipt.

I hereby certify that the wording of this instrument is identical to the wording specified in subsection 7 of North Dakota Administrative Code section 33-24-05-81, as such regulation was constituted on the date first above written, and that the insurer is licensed to transact the business of insurance, in the state of North Dakota or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

[Signature of authorized representative of insurer]

[Type name]

[Title], authorized representative of [name of insurer]

[Address of representative]

11. A letter of credit, as specified in subsection 8 of section 33-24-05-79, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Irrevocable Standby Letter of Credit
Name and Address of Issuing Institution
North Dakota State Department of Health

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. _____ in the favor of ["any and all third-party liability claimants" or insert name of TRUSTEE of the standby trust fund], at the request and for the account of [owner or operator's name and address] for third-party liability awards or settlements up to [in words] United States dollars $_____ per occurrence and the annual aggregate amount of [in words] United States dollars $_____, for sudden accidental occurrences and/or for third-party liability awards or settlements up to the amount of [in words] United States dollars $_____ per occurrence, and the annual aggregate amount of [in words] United States dollars $_____, for nonsudden accidental occurrences available upon presentation of a sight draft bearing reference to this letter of credit No. _____, and [insert the following language if the letter of credit is being used without a standby trust fund]: (1) a signed certificate reading as follows:

Certificate of Valid Claim

The undersigned, as parties [insert principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operations of [principal's], hazardous waste treatment, storage, or disposal facility should be paid in the amount of $ [_____]. We hereby certify that the claim does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal].

This exclusion applies:

(A) Whether [insert principal] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert principal];

(2) Premises that are sold, given away, or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert principal];

(4) Personal property in the care, custody, or control of [insert principal];

(5) That particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

[Signatures] _____
GRANTOR _____
[Signatures] _____
Claimant(s) _____

or (2) a valid final court order establishing a judgment against the GRANTOR for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the GRANTOR'S facility or group of facilities.

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but such expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least one hundred twenty days before the current expiration date, we notify you, the DEPARTMENT, and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

When this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us.

[Insert the following language if a standby trust fund is not being used: "In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered [insert "primary" or "excess"] coverage"].

We certify that the wording of this letter of credit is identical to the wording specified in subsection 11 of section 33-24-05-81 as such regulations were constituted on the date shown immediately below. [Signature(s) and title(s) of official(s) of issuing institution] [Date].

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits published and copyrighted by the International Chamber of Commerce" or "the Uniform Commercial Code"].

12. A surety bond, as specified in subsection 9 of section 33-24-05-79, must be worded as follows: except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

PAYMENT BOND

Surety Bond No. [Insert number]

Parties [Insert name and address of owner or operator], principal, incorporated in [Insert state of incorporation] of [Insert city and state of principal place of business] and [Insert name and address of surety company(ies)], surety company(ies), of [Insert surety(ies) place of business].

Identification number, name, and address for each facility guaranteed by this bond:

	Sudden Accidental Occurrences	Nonsudden Accidental Occurrences
Penal Sum Per Occurrence	[Insert Amount]	[Insert Amount]
Annual Aggregate	[Insert Amount]	[Insert Amount]

Purpose: This is an AGREEMENT between the surety(ies) and the principal under which the surety(ies), its (their) successors and assignees, agree to be responsible for the payment of claims against the principal for bodily injury and/or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental occurrences arising from operations of the facility or group of facilities in the sums prescribed herein; subject to the governing provisions and the following conditions.

Governing Provisions:

(1) Section 3004 of the Resource Conservation and Recovery Act of 1976, as amended.

(2) Rules and regulations of the United States environmental protection agency (EPA), particularly 40 CFR ["264.147" or "265.147"] (if applicable).

(3) Rules and regulations of the governing state agency [particularly section 33-24-05-79 and subsection 5 of section 33-24-06-16 of the North Dakota Administrative Code] (if applicable).

Conditions:

(1) The principal is subject to the applicable governing provisions that require the principal to have and maintain liability coverage for bodily injury and property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental occurrences arising from operations of the facility or group of facilities. Such obligation does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits, or unemployment compensation law or similar law.

(c) Bodily injury to:

(1) An employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal]. This exclusion applies:

(A) Whether [insert principal] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert principal];

(2) Premises that are sold, given away, or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert principal];

(4) Personal property in the care, custody, or control of [insert principal];

(5) That particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

(2) This bond assures that the principal will satisfy valid third-party liability claims, as described in condition 1.

(3) If the principal fails to satisfy a valid third-party liability claim, as described above, the surety(ies) becomes liable on this bond obligation.

(4) The surety(ies) shall satisfy a third-party liability claim only upon the receipt of one of the following documents:

(a) Certification from the principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties [insert name of principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $ [_____].

[Signature]
Principal
[Notary] [Date]
[Signature(s)]
Claimant(s)
[Notary] [Date]

or (b) A valid final court order establishing a judgment against the principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the principal's facility or group of facilities.

(5) In the event of combination of this bond with another mechanism for liability coverage, this bond will be considered [insert "primary" or "excess"] coverage.

(6) The liability of the surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the surety(ies) hereunder exceed the amount of said annual aggregate penal sum, provided that the surety(ies) furnish(es) notice to the DEPARTMENT forthwith of all claims filed and payments made by the surety(ies) under this bond.

(7) The surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the principal and the DEPARTMENT provided, however, the cancellation shall not occur during the one hundred twenty days beginning on the date of receipt of the notice of cancellation by the principal and the DEPARTMENT, as evidenced by the return receipt.

(8) The principal may terminate this bond by sending written notice to the surety(ies) and to the DEPARTMENT.

(9) The surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agree(s) that no such amendment shall in any way alleviate its (their) obligation on this bond.

(10) This bond is effective from [insert date] (12:01 a.m., standard time, at the address of the principal as stated herein) and shall continue in force until terminated as described above.

In Witness Whereof, the principal and surety(ies) have executed this bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the principal and surety(ies) and that the wording of this surety bond is identical to the wording specified in subsection 12 of section 33-24-05-81, as such regulations were constituted on the date this bond was executed.

PRINCIPAL
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

CORPORATE SURETY(IES)
State of incorporation: _____
Liability limit: $_____
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]
[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for surety above.]
Bond premium: $_____

13. TRUST AGREEMENT

a. A TRUST AGREEMENT, as specified in subsection 10 of section 33-24-05-79, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

TRUST AGREEMENT, the "AGREEMENT", entered into as of [date] by and between [name of the owner or operator] a [name of state] [insert "corporation", "partnership", "association", or "proprietorship"], the "GRANTOR", and [name of corporate TRUSTEE], [insert, "incorporated in the state of _____" or "a national bank"], the "TRUSTEE".

Whereas, the DEPARTMENT has established certain regulations applicable to the GRANTOR, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the GRANTOR has elected to establish a trust to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the GRANTOR, acting through its duly authorized officers, has selected the TRUSTEE to be the TRUSTEE under this AGREEMENT, and the TRUSTEE is willing to act as TRUSTEE.

Now, therefore, the GRANTOR and the TRUSTEE agree as follows:

Section 1. Definitions. As used in this AGREEMENT:

(a) The term "GRANTOR" means the owner or operator who enters into this AGREEMENT and any successors or assigns of the GRANTOR.

(b) The term "TRUSTEE" means the TRUSTEE who enters into this AGREEMENT and any successor TRUSTEE.

Section 2. Identification of Facilities. This AGREEMENT pertains to the facilities identified on attached schedule A [on schedule A, for each facility list the identification number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this AGREEMENT].

Section 3. Establishment of FUND. The GRANTOR and the TRUSTEE hereby establish a trust fund, hereinafter the "FUND", for the benefit of any and all third parties injured or damaged by [sudden or nonsudden, or both] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amount of _____ [up to $1 million] per occurrence and _____ [up to $2 million] annual aggregate for sudden accidental occurrences and _____ [up to $3 million] per occurrence and _____ [up to $6 million] annual aggregate for nonsudden occurrences, except that the FUND is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert GRANTOR] is obligated to pay damages by reason of the assumption of liability in a contract or AGREEMENT. This exclusion does not apply to liability for damages that [insert GRANTOR] would be obligated to pay in the absence of the contract or AGREEMENT.

(b) Any obligation of [insert GRANTOR] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of [insert GRANTOR] arising from, and in the course of, employment by [insert GRANTOR]; or

(2) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert GRANTOR].

This exclusion applies:

(A) Whether [insert GRANTOR] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert GRANTOR];

(2) Premises that are sold, given away, or abandoned by [insert GRANTOR] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert GRANTOR];

(4) Personal property in the care, custody, or control of [insert GRANTOR];

(5) That particular part of real property on which [insert GRANTOR] or any contractors or subcontractors working directly or indirectly on behalf of [insert GRANTOR] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the FUND shall be considered [insert "primary" or "excess"] coverage.

The FUND is established initially as consisting of the property, which is acceptable to the TRUSTEE, described in schedule B attached hereto. Such property and any other property subsequently transferred to the TRUSTEE is referred to as the FUND, together with all earnings and profits thereon, less any payments or distributions made by the TRUSTEE pursuant to this AGREEMENT. The FUND shall be held by the TRUSTEE, IN TRUST, as hereinafter provided. The TRUSTEE shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the GRANTOR, any payments necessary to discharge any liabilities of the GRANTOR established by the DEPARTMENT.

Section 4. Payment for Bodily Injury or Property Damage. The TRUSTEE shall satisfy a third-party liability claim by making payments from the FUND only upon receipt of one of the following documents:

(a) Certification from the GRANTOR and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties [insert GRANTOR] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating

[GRANTOR'S] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[_____].

[Signatures]
Grantor

[Signatures]
Claimant(s)

(b) A valid final court order establishing a judgment against the GRANTOR for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the GRANTOR'S facility or group of facilities.

Section 5. Payments Comprising the FUND. Payments made to the TRUSTEE for the FUND shall consist of cash or securities acceptable to the TRUSTEE.

Section 6. TRUSTEE Management. The TRUSTEE shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the GRANTOR may communicate in writing to the TRUSTEE from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the FUND, the TRUSTEE shall discharge the trustee's duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstance then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the GRANTOR, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), may not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The TRUSTEE is authorized to invest the FUND in time or demand deposits of the TRUSTEE, to the extent insured by an agency of the federal or a state government; and

(iii) The TRUSTEE is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The TRUSTEE is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the FUND to any common commingled, or collective trust fund created by the TRUSTEE in which the FUND is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 81a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the TRUSTEE. The TRUSTEE may vote such shares in its discretion.

Section 8. Express Powers of TRUSTEE. Without in any way limiting the powers and discretions conferred upon the TRUSTEE by the other provisions of this AGREEMENT or by law, the TRUSTEE is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the TRUSTEE shall be bound to see to the

application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the FUND in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the TRUSTEE in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States government, or any agency or instrumentality thereof, with a federal reserve bank, but the books and records of the TRUSTEE shall at all times show that all such securities are part of the FUND;

(d) To deposit any cash in the FUND in interest-bearing accounts maintained or savings certificates issued by the TRUSTEE, in its separate corporate capacity, or in any other banking institution affiliated with the TRUSTEE, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the FUND.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the FUND and all brokerage commissions incurred by the FUND shall be paid from the FUND. All other expenses incurred by the TRUSTEE in connection with the administration of this trust, including fees for legal services rendered to the TRUSTEE, the compensation of the TRUSTEE to the extent not paid directly by the GRANTOR, and all other proper charges and disbursements of the TRUSTEE shall be paid from the FUND.

Section 10. Annual Valuations. The TRUSTEE shall annually, at least thirty days prior to the anniversary date of establishment of the FUND, furnish to the GRANTOR and to the DEPARTMENT a statement confirming the value of the trust. Any securities in the FUND shall be valued at market value as of no more than sixty days prior to the anniversary date of establishment of the FUND. The failure of the GRANTOR to object in writing to the TRUSTEE within ninety days after the statement has been furnished to the GRANTOR and the DEPARTMENT shall constitute a conclusively binding assent by the GRANTOR barring the GRANTOR from asserting any claim or liability against the TRUSTEE with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The TRUSTEE may from time to time consult with counsel, who may be counsel to the GRANTOR with respect to any question arising as to the construction of this AGREEMENT or any action to be taken hereunder. The TRUSTEE shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. TRUSTEE Compensation. The TRUSTEE shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the GRANTOR.

Section 13. Successor TRUSTEE. The TRUSTEE may resign or the GRANTOR may replace the TRUSTEE, but such resignation or replacement shall not be effective until the GRANTOR has appointed a successor TRUSTEE and this successor accepts the appointment. The successor TRUSTEE shall have the same powers and duties as those conferred upon the TRUSTEE hereunder. Upon the successor TRUSTEE'S acceptance of the appointment, the TRUSTEE shall assign, transfer, and pay over to the successor TRUSTEE the funds and

properties then constituting the FUND. If for any reason the GRANTOR cannot or does not act in the event of the resignation of the TRUSTEE, the TRUSTEE may apply to a court of competent jurisdiction for the appointment of a successor TRUSTEE or for instructions. The successor TRUSTEE shall specify the date on which it assumes administration of the trust in a writing sent to the GRANTOR, the DEPARTMENT, and the present TRUSTEE by certified mail ten days before such change becomes effective. Any expenses incurred by the TRUSTEE as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the TRUSTEE. All orders, requests, and instructions by the GRANTOR to the TRUSTEE shall be in writing, signed by such persons as are designated in the attached exhibit A or such other designees as the GRANTOR may designate by amendments to exhibit A. The TRUSTEE shall be fully protected in acting without inquiry in accordance with the GRANTOR'S orders, requests, and instructions. All orders, requests, and instructions by the DEPARTMENT to the TRUSTEE shall be in writing, signed by the DEPARTMENT, or its designees, and the TRUSTEE shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The TRUSTEE shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the GRANTOR or DEPARTMENT hereunder has occurred. The TRUSTEE shall have no duty to act in the absence of such orders, requests, and instructions from the GRANTOR and/or the department, except as provided for herein.

Section 15. Notice of Nonpayment. If a payment for bodily injury or property damage is made under Section 4 of this trust, the TRUSTEE shall notify the GRANTOR of such payment and the amount(s) thereof within five working days. The GRANTOR shall, on or before the anniversary date of the establishment of the FUND following such notice, either make payments to the TRUSTEE in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under Section 4, or shall provide written proof to the TRUSTEE that other financial assurance for liability coverage has been obtained equaling the amount necessary to return the trust to its value prior to the payment of claims. If the GRANTOR does not either make payments to the TRUSTEE or provide the TRUSTEE with such proof, the TRUSTEE shall within ten working days after the anniversary date of the establishment of the FUND provide a written notice of nonpayment to the DEPARTMENT.

Section 16. Amendment of AGREEMENT. This AGREEMENT may be amended by an instrument in writing executed by the GRANTOR, the TRUSTEE, and the appropriate DEPARTMENT administrator if the GRANTOR ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this AGREEMENT as provided in Section 16, this trust shall be irrevocable and shall continue until terminated at the written AGREEMENT of the GRANTOR, the TRUSTEE, and the DEPARTMENT, or by the TRUSTEE, and the DEPARTMENT, if the GRANTOR ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the GRANTOR.

The DEPARTMENT will agree to termination of the trust when the owner or operator substitutes alternate financial assurance as specified in this section.

Section 18. Immunity and Indemnification. The TRUSTEE shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the GRANTOR or the DEPARTMENT issued in accordance with this AGREEMENT. The TRUSTEE shall be indemnified and saved harmless by the GRANTOR or from the trust fund, or both, from and against any personal liability to which the TRUSTEE may be subjected by reason of any act or conduct in its official capacity,

including all expenses reasonably incurred in its defense in the event the GRANTOR fails to provide such defense.

Section 19. Choice of Law. This AGREEMENT shall be administered, construed, and enforced according to the laws of the state of North Dakota.

Section 20. Interpretation. As used in this AGREEMENT, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this AGREEMENT shall not affect the interpretation or the legal efficacy of this AGREEMENT.

In Witness Whereof the parties have caused this AGREEMENT to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this AGREEMENT is identical to the wording specified in subsection 13 of section 33-24-05-81, as such regulations were constituted on the date first above written.

[Signature of GRANTOR]
[Title]

Attest:
[Title]
[Seal]

[Signature of TRUSTEE]
Attest:
[Title]
[Seal]

b. The following is an example of the certification of acknowledgment which must accompany the TRUST AGREEMENT for a trust fund as specified in subsection 10 of section 33-24-05-79.

State of _____
County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of notary public]

14. Standby TRUST AGREEMENT

a. A standby TRUST AGREEMENT, as specified in subsection 8 of section 33-24-05-79, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Standby TRUST AGREEMENT

TRUST AGREEMENT, the "AGREEMENT", entered into as of [date] by and between [name of the owner or operator] a [name of a state] [insert "corporation", "partnership", "association", or "proprietorship"], the "GRANTOR", and [name of corporate TRUSTEE], [insert, "incorporated in the state of _____" or "a national bank"], the "TRUSTEE".

Whereas the North Dakota State Department of Health has established certain regulations applicable to the GRANTOR, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the GRANTOR has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the GRANTOR, acting through its duly authorized officers, has selected the TRUSTEE to be the TRUSTEE under this AGREEMENT, and the TRUSTEE is willing to act as TRUSTEE.

Now, therefore, the GRANTOR and the TRUSTEE agree as follows:

Section 1. Definitions. As used in this AGREEMENT:

(a) The term "GRANTOR" means the owner or operator who enters into this AGREEMENT and any successors or assigns of the GRANTOR.

(b) The term "TRUSTEE" means the TRUSTEE who enters into this AGREEMENT and any successor TRUSTEE.

Section 2. Identification of Facilities. This AGREEMENT pertains to the facilities identified on attached schedule A [on schedule A, for each facility list the identification number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this AGREEMENT].

Section 3. Establishment of FUND. The GRANTOR and the TRUSTEE hereby establish a standby trust fund, hereafter the "FUND", for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of_____ [up to $1 million] per occurrence and _____ [up to $2 million] annual aggregate for sudden accidental occurrences and _____[up to $3 million] per occurrence and _____ [up to $6 million] annual aggregate for nonsudden occurrences, except that the FUND is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert GRANTOR] is obligated to pay damages by reason of the assumption of liability in a contract or AGREEMENT. This exclusion does not apply to liability for damages that [insert GRANTOR] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert GRANTOR] under a workers' compensation, disability benefits, or unemployment compensation law, or any similar law.

(c) Bodily injury to:

(1) An employee [insert GRANTOR] arising from, and in the course of, employment by [insert GRANTOR]; or

(2) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert GRANTOR].

This exclusion applies:

(A) Whether [insert GRANTOR] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert GRANTOR];

(2) Premises that are sold, given away, or abandoned by [insert GRANTOR] if the property damage arises out of any part of those premises;

(3) Property loaned by [insert GRANTOR];

(4) Personal property in the care, custody, or control of [insert GRANTOR];

(5) That particular part of real property on which [insert GRANTOR] or any contractors or subcontractors working directly or indirectly on behalf of [insert GRANTOR] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the FUND shall be considered [insert "primary" or "excess"] coverage.

The FUND is established initially as consisting of the proceeds of the letter of credit deposited into the FUND. Such proceeds and any other property subsequently transferred to the TRUSTEE is referred to as the FUND, together with all earnings and profits thereon, less any payments or distributions made by the TRUSTEE pursuant to this AGREEMENT. The FUND shall be held by the TRUSTEE, IN TRUST, as hereinafter provided. The TRUSTEE shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the GRANTOR, any payments necessary to discharge any liabilities of the GRANTOR established by the DEPARTMENT.

Section 4. Payment for Bodily Injury or Property Damage. The TRUSTEE shall satisfy a third-party liability claim by drawing on the letter of credit described in schedule B and by making payments from the FUND only upon receipt of one of the following documents:

(a) Certification from the GRANTOR and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert GRANTOR] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [GRANTOR'S] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $ [_____].

[Signatures] _____

Grantor _____

[Signatures] _____

Claimant(s) _____

(b) A valid final court order establishing a judgment against the GRANTOR for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the GRANTOR'S facility or group of facilities.

Section 5. Payments Comprising the FUND. Payments made to the TRUSTEE for the FUND shall consist of the proceeds from the letter of credit drawn upon by the TRUSTEE in accordance with the requirements of subsection 11 of section 33-24-05-81 and Section 4 of this AGREEMENT.

Section 6. TRUSTEE Management. The TRUSTEE shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the GRANTOR may communicate in writing to the TRUSTEE from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the FUND, the TRUSTEE shall discharge the trustee's duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the GRANTOR, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The TRUSTEE is authorized to invest the FUND in time or demand deposits of the TRUSTEE, to the extent insured by an agency of the federal or a state government; and

(iii) The TRUSTEE is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The TRUSTEE is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the FUND to any common, commingled, or collective trust fund created by the TRUSTEE in which the FUND is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the TRUSTEE. The TRUSTEE may vote such shares in its discretion.

Section 8. Express Powers of TRUSTEE. Without in any way limiting the powers and discretions conferred upon the TRUSTEE by the other provisions of this AGREEMENT or by law, the TRUSTEE is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the TRUSTEE shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the FUND in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the TRUSTEE in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States government, or any agency or instrumentality thereof, with a federal reserve bank, but the books and records of the TRUSTEE shall at all times show that all such securities are part of the FUND;

(d) To deposit any cash in the FUND in interest-bearing accounts maintained or savings certificates issued by the TRUSTEE, in its separate corporate capacity, or in any other banking institution affiliated with the TRUSTEE, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the FUND.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the FUND and all brokerage commissions incurred by the FUND shall be paid from the FUND. All other expenses incurred by the TRUSTEE in connection with the administration of this trust, including fees for legal services rendered to the TRUSTEE, the compensation of the TRUSTEE to the extent not paid directly by the GRANTOR, and all other proper charges and disbursements to the TRUSTEE shall be paid from the FUND.

Section 10. Advice of Counsel. The TRUSTEE may from time to time consult with counsel, who may be counsel to the GRANTOR, with respect to any question arising as to the construction of this AGREEMENT or any action to be taken hereunder. The TRUSTEE shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. TRUSTEE Compensation. The TRUSTEE shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the GRANTOR.

Section 12. Successor TRUSTEE. The TRUSTEE may resign or the GRANTOR may replace the TRUSTEE, but such resignation or replacement shall not be effective until the GRANTOR has appointed a successor TRUSTEE and this successor accepts the appointment. The successor TRUSTEE shall have the same powers and duties as those conferred upon the TRUSTEE hereunder. Upon the successor TRUSTEE'S acceptance of the appointment, the TRUSTEE shall assign, transfer, and pay over to the successor TRUSTEE the funds and properties then constituting the FUND. If for any reason the GRANTOR cannot or does not act in the event of the resignation of the TRUSTEE, the TRUSTEE may apply to a court of competent jurisdiction for the appointment of a successor TRUSTEE or for instructions. The successor TRUSTEE shall specify the date on which it assumes administration of the trust in a writing sent to the GRANTOR, the DEPARTMENT, and the present TRUSTEE by certified mail ten days before such change becomes effective. Any expenses incurred by the TRUSTEE as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 13. Instructions to the TRUSTEE. All orders, requests, certifications of valid claims, and instructions to the TRUSTEE shall be in writing, signed by such persons as are designated in the attached exhibit A, or such other designees as the GRANTOR may designate by amendments to exhibit A. The TRUSTEE shall be fully protected in acting without inquiry in accordance with the GRANTOR'S orders, requests, and instructions. The TRUSTEE shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the GRANTOR or the DEPARTMENT hereunder has occurred. The TRUSTEE shall have

no duty to act in the absence of such orders, requests, and instructions from the GRANTOR and/or the DEPARTMENT, except as provided for herein.

Section 14. Amendment of AGREEMENT. This AGREEMENT may be amended by an instrument in writing executed by the GRANTOR, the TRUSTEE and the DEPARTMENT, or by the TRUSTEE and the DEPARTMENT if the GRANTOR ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this AGREEMENT as provided in Section 14, this trust shall be irrevocable and shall continue until terminated at the written AGREEMENT of the GRANTOR, the TRUSTEE, and the DEPARTMENT, or by the TRUSTEE and the DEPARTMENT, if the GRANTOR ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be paid to the GRANTOR.

The DEPARTMENT will agree to termination of the trust when the owner or operator substitutes alternative financial assurance as specified in this section.

Section 16. Immunity and Indemnification. The TRUSTEE shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the GRANTOR and the DEPARTMENT issued in accordance with this AGREEMENT. The TRUSTEE shall be indemnified and saved harmless by the GRANTOR or from the trust fund, or both, from and against any personal liability to which the TRUSTEE may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the GRANTOR fails to provide such defense.

Section 17. Choice of Law. This AGREEMENT shall be administered, construed, and enforced according to the laws of the state of North Dakota.

Section 18. Interpretation. As used in this AGREEMENT, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this AGREEMENT shall not affect the interpretation or the legal efficacy of this AGREEMENT.

In Witness Whereof the parties have caused this AGREEMENT to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this AGREEMENT is identical to the wording specified in subsection 14 of section 33-24-05-81 as such regulations were constituted on the date first above written.

[Signature of GRANTOR]

[Title]

Attest:

[Title]

[Seal]

[Signature of TRUSTEE]

Attest:

[Title]

[Seal]

b. The following is an example of the certification of acknowledgment which must accompany the TRUST AGREEMENT for a standby trust fund as specified in subsection 8 of section 33-24-05-79. State requirements may differ on the proper content of this acknowledgment.

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of notary public]

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-82. [Reserved]

33-24-05-83. [Reserved]

33-24-05-84. [Reserved]

33-24-05-85. [Reserved]

33-24-05-86. [Reserved]

33-24-05-87. [Reserved]

33-24-05-88. [Reserved]

33-24-05-89. Applicability of requirements for use and management of containers.

Sections 33-24-05-89 through 33-24-05-102 apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as section 33-24-05-01 provides otherwise.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-90. Condition of containers.

If a container holding hazardous waste is not in good condition (for example, severe rusting, apparent structural defects) or if it begins to leak, the owner or operator shall transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other

way that complies with the requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-525, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819.

History: Effective January 1, 1984; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-91. Compatibility of waste with containers.

The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-92. Management of containers.

1. A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

2. A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-93. Inspections.

At least weekly, the owner or operator shall inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors. A logbook of these weekly inspections must be maintained.

History: Effective January 1, 1984; amended effective December 1, 1988.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-94. Containment.

1. Container storage areas must have a containment system that is designed and operated in accordance with subsection 2, except as provided otherwise in subsection 3.

2. The containment system must be designed and operated as follows:

   a. A base must underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

   b. The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.

   c. The containment system must have sufficient capacity to contain ten percent of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquid need not be considered in this determination.

d. Run-on into the containment system must be prevented, unless the collection system has sufficient excess capacity in addition to that required in subdivision c to contain any run-on which might enter the system.

e. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

3. Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by subsection 2, except as provided by subsection 4 or provided that:

   a. The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation; or

   b. The containers are elevated or are otherwise protected from contact with accumulated liquid.

4. Storage areas that store containers holding the wastes listed below that do not contain free liquids must have a containment system defined by subsection 2:

   a. F020, F021, F022, F023, F026, and F027.

   b. [Reserved]

History: Effective January 1, 1984; amended effective October 1, 1986.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-95. Special requirements for ignitable or reactive wastes.

Containers holding ignitable or reactive waste must be located at least fifteen meters [50 feet] from the facility's property line.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-96. Special requirements for incompatible wastes.

1. Incompatible wastes, or incompatible wastes and materials, may not be placed in the same container, unless subsection 2 of section 33-24-05-08 is complied with.

2. Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material.

3. A storage container holding a hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-97. Closure.

At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-98. Air emission standards.

The owner or operator shall manage all hazardous waste placed in a container in accordance with the requirements of sections 33-24-05-400 through 33-24-05-474.

History: Effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-99. [Reserved]

33-24-05-100. [Reserved]

33-24-05-101. [Reserved]

33-24-05-102. [Reserved]

33-24-05-103. Applicability of tank requirements.

The requirements of sections 33-24-05-103 through 33-24-05-117 apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in subsections 1, 2, and 3 or in section 33-24-05-01.

1. Tank systems that are used to treat or store hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in section 33-24-05-106. To demonstrate the absence or presence of free liquids in the stored, treated, or both waste, the following test must be used: method 9095B (paint filter liquids test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05.

2. Tank systems, including sumps, as defined in section 33-24-01-04, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in subsection 1 of section 33-24-05-106.

3. Tanks, sumps, and other such collection devices or systems used in conjunction with drip pads, as defined in section 33-24-01-04 and regulated under sections 33-24-05-501 through 33-24-05-524, must meet the requirements of sections 33-24-05-103 through 33-24-05-117.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-104. Assessment of existing tank system's integrity.

1. For each existing tank system that does not have secondary containment meeting the requirements of section 33-24-05-106, the owner or operator shall determine that the tank system is not leaking or is unfit for use. Except as provided in subsection 3, the owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by a qualified professional engineer, in accordance with subsection 4 of section 33-24-06-03, that attests to the tank system's integrity by January 12, 1988.

2. This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the wastes to be stored or treated, to ensure that it will not collapse, rupture, or fail. At a minimum, the assessment must consider of the following:

   a. Design standards, if available, according to which the tank and ancillary equipment were constructed;

   b. Hazardous characteristics of the wastes that have been and will be handled;

   c. Existing corrosion protection measures;

   d. Documented age of the tank system if available (otherwise, an estimate of the age); and

   e. Results of a leak test, internal inspection, or other tank integrity examination such that:

      (1) For nonenterable underground tanks, the assessment must include a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects; and

      (2) For other than nonenterable underground tanks and for ancillary equipment, this assessment must include either a leak test, as described above, or other integrity examination that is certified by a qualified professional engineer in accordance with subsection 4 of section 33-24-06-03, that addresses cracks, leaks, corrosion, and erosion.

      [Note: The practices described in the American petroleum institute publication, guide for inspection of refinery equipment, chapter XIII, "Atmospheric and Low-Pressure Storage Tanks", fourth edition, 1981, may be used, where applicable, as guidelines in conducting other than a leak test.]

3. Tank systems that store or treat materials that become hazardous waste subsequent to July 14, 1986, must conduct this assessment within twelve months after the date that the waste becomes a hazardous waste.

4. If, as a result of the assessment conducted in accordance with subsection 1, a tank system is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of section 33-24-05-109.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-105. Design and installation of new tank systems or components.

1. Owners or operators of new tank systems or components shall obtain and submit to the department, at time of submittal of part B application information, a written assessment, reviewed and certified by a qualified professional engineer, in accordance with subsection 4 of

section 33-24-06-03, attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment must show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the wastes to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. This assessment, which will be used by the department to review and approve or disapprove the acceptability of the tank system design, must include, at a minimum, the following information:

a. Design standards according to which tanks or the ancillary equipment, or both, are constructed;

b. Hazardous characteristics of the waste to be handled;

c. For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:

(1) Factors affecting the potential for corrosion including, but not limited to:

(a) Soil moisture content;

(b) Soil pH;

(c) Soil sulfides level;

(d) Soil resistivity;

(e) Structure to soil potential;

(f) Influence of nearby underground metal structures (for example, piping);

(g) Existence of stray electric current; and

(h) Existing corrosion protecting measures (for example, coating, cathodic protection); and

(2) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

(a) Corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.;

(b) Corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (for example, impressed current or sacrificial anodes);

(c) Electrical isolation devices such as insulating joints and flanges;

[Note: The practices described in the national association of corrosion engineers standard, "Recommended Practice (RP-02-85) Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems", and the American petroleum institute publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", may be used, where applicable, as guidelines in providing corrosion protection for tank systems.]

(d) For underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

(e) Design considerations to ensure that:

[1] Tank foundations will maintain the load of a full tank;

[2] Tank systems will be anchored to prevent floatation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of subsection 1 of section 33-24-05-09; and

[3] Tank systems will withstand the effects of frost heave.

2. The owner or operator of a new tank system shall ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or a qualified professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, shall inspect the system for the presence of any of the following items:

   a. Weld breaks;

   b. Punctures;

   c. Scrapes of protective coating;

   d. Cracks;

   e. Corrosion; and

   f. Other structural damage or inadequate construction or installation.

   All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

3. New tank systems or components that are placed underground and that are backfilled must be provided with a backfill material that is of a noncorrosive, porous, homogenous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

4. All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed, or placed into use. If a tank system is found not to be tight, all repairs necessary to remedy the leaks in the system must be performed prior to the tank system being covered, enclosed, or placed into use.

5. Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

   [Note: The piping system installation procedures described in American petroleum institute publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems", or American national standards institute standard B31.3 "Petroleum Refinery Piping" and American national standards institute standard B31.4, "Liquid Petroleum Transportation Piping System", may be used where applicable, as guidelines for proper installation of piping systems.]

6. The owner or operator shall provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on information provided under subdivision c of subsection 1 or other corrosion protection if the department believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. Installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

7. The owner or operator shall obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of subsections 2 through 6, attesting that the tank system was properly designed and installed and that repairs, pursuant to subsections 2 and 4 were performed. These written statements must also include the certification statement as required in subsection 4 of section 33-24-06-03.

History: Effective January 1, 1984; amended effective December 1, 1988; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-106. Containment and detection of releases.

1. In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this section must be provided (except as provided in subsections 6 and 7):

   a. For all new and existing tank systems or components, prior to their being put into service.

   b. For tank systems that store or treat materials that become hazardous wastes, within two years of the hazardous waste listing, or when the tank system has reached fifteen years of age, whichever comes later.

2. Secondary containment systems must be:

   a. Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and

   b. Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

3. To meet the requirements of subsection 2, secondary containment systems must be at a minimum:

   a. Constructed of or lined with materials that are compatible with the waste or wastes to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic);

   b. Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift;

   c. Provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment

system within twenty-four hours, or at the earliest practicable time if the owner or operator can demonstrate to the department that the existing detection technologies or site conditions will not allow detection of a release within twenty-four hours; and

d. Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within twenty-four hours, or in as timely a manner as possible to prevent harm to human health and the environment, if the owner or operator can demonstrate to the department that removal of the released waste or accumulated precipitation cannot be accomplished within twenty-four hours. (Note: If the collected material is a hazardous waste under chapter 33-24-02, it is subject to management as a hazardous waste in accordance with all applicable requirements of chapters 33-24-03 through 33-24-05. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of sections 301, 304, and 402 of the Clean Water Act, as amended. If discharged to a publicly owned treatment works, it is subject to the requirements of section 307 of the Clean Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR part 302.)

4. Secondary containment for tanks must include one or more of the following devices:

   a. A liner (external to the tank);

   b. A vault;

   c. A double-walled tank; or

   d. An equivalent device as approved by the department.

5. In addition to the requirements of subsections 2, 3, and 4, secondary containment systems must satisfy the following requirements:

   a. External liner systems must be:

      (1) Designed or operated to contain one hundred percent of the capacity of the largest tank within its boundary;

      (2) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a twenty-five-year, twenty-four-hour rainfall event;

      (3) Free of cracks or gaps; and

      (4) Designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tanks (for example, capable of preventing lateral as well as vertical migration of the waste).

   b. Vault systems must be:

      (1) Designed or operated to contain one hundred percent of the capacity of the largest tank within its boundary;

      (2) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess

capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a twenty-five-year, twenty-four-hour rainfall event;

(3) Constructed with chemical-resistant water stops in place at all joints (if any);

(4) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;

(5) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

(a) Meets the definition of ignitable wastes under section 33-24-02-11; or

(b) Meets the definition of reactive wastes under section 33-24-02-13, and may form an ignitable or explosive vapor; and

(6) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

c. Double-walled tanks must be:

(1) Designed as an integral structure (for example, an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell;

(2) Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell; and

(3) Provided with a built-in continuous leak detection system capable of detecting a release within twenty-four hours, or at the earliest practical time if the owner or operator can demonstrate to the department, and the department concludes, that the existing detection technology or site conditions would not allow detection with a release within twenty-four hours. (Note: The provisions outlined in the steel tank institute's "standard for dual wall underground steel storage tanks" may be used as guidelines for aspects of the design of underground steel double-walled tanks.)

6. Ancillary equipment must be provided with secondary containment (for example, trench, jacketing, double-walled piping) that meets the requirements of subsections 2 and 3 except for:

a. Aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;

b. Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis;

c. Sealless or magnetic coupling pumps, and sealless valves, that are visually inspected for leaks on a daily basis; and

d. Pressurized aboveground piping systems with automatic shutoff devices (for example, excess flow check valves, flow metering shutdown devices, loss of pressure actuated shutoff devices) that are visually inspected for leaks on a daily basis.

7. The owner or operator may obtain a variance from the requirements of this section if the department finds, as a result of a demonstration by the owner or operator that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituent into the ground water; or surface

water at least as effectively as secondary containment during the active life of the tank system or that in the event of a release that does migrate to ground water or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with subdivision b, be exempted from secondary containment requirements of this section.

a. In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the department will consider:

    (1) The nature and quantity of the wastes;

    (2) The proposed alternate design and operation;

    (3) The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and ground water; and

    (4) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to ground water or surface water.

b. In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the department will consider:

    (1) The potential adverse effects on ground water, surface water, and land quality taking into account:

        (a) The physical and chemical characteristics of the waste in the tank system, including its potential for migration;

        (b) The hydrogeological characteristics of the facility and surrounding land;

        (c) The potential for health risks caused by human exposure to waste constituents;

        (d) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

        (e) The persistence and permanence of potential adverse effects;

    (2) The potential adverse effects of a release on ground water quality, taking into account:

        (a) The quantity and quality of ground water and the direction of ground water flow;

        (b) The proximity and withdrawal rates of ground water users;

        (c) The current and future uses of ground water in the area; and

        (d) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality;

    (3) The potential adverse effects of a release on surface water quality, taking into account:

        (a) The quantity and quality of ground water and the direction of ground water flow;

        (b) The patterns of rainfall in the region;

(c) The proximity of the tank system to surface waters;

(d) The current and future uses of surface waters in the area and any water quality standards established for those surface waters; and

(e) The existing quality of surface water, including other sources of contamination and cumulative impact on surface water quality; and

(4) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

(a) The patterns of rainfall in the region; and

(b) The current and future uses of the surrounding land.

c. The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of subdivision a, at which a release of hazardous waste has occurred from the primary tank system, but has not migrated beyond the zone of engineering control (as established in the variance), must:

(1) Comply with the requirements of section 33-24-05-109, except subsection 4; and

(2) Decontaminate or remove contaminated soil to the extent necessary to:

(a) Enable the tank system for which the variance was granted to resume operation with the capability for the detection of releases at least equivalent to the capability it had prior to the release; and

(b) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water; and

(3) If contaminated soil cannot be removed or decontaminated in accordance with paragraph 2, comply with the requirements of subsection 2 of section 33-24-05-110.

d. The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of subdivision a, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), shall:

(1) Comply with the requirements of subsections 1, 2, 3, and 4 of section 33-24-05-109;

(2) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if ground water has been contaminated, the owner or operator shall comply with the requirements of subsection 2 of section 33-24-05-110;

(3) If repairing, replacing, or reinstalling the tank system, provides secondary containment in accordance with the requirements of subsections 1 through 6 or reapply for a variance from the secondary containment and meet the requirements for new tank systems in section 33-24-05-105 if the tank system is replaced. The owner or operator shall comply with these requirements even if contaminated soil can be decontaminated or removed and ground water or surface water has not been contaminated.

8. The following procedures must be followed in order to request a variance from secondary containment:

a. The department must be notified in writing by the owner or operator that the owner or operator intends to conduct and submit a demonstration for a variance from secondary containment as allowed in subsection 7 according to the following schedule:

(1) For existing tank systems, at least twenty-four months prior to the date that secondary containment must be provided in accordance with subsection 1.

(2) For new tank systems, at least thirty days prior to entering into a contract for installation.

b. As part of the notification, the owner or operator shall also submit to the department a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in subdivision a or b of subsection 7;

c. The demonstration for a variance must be completed within one hundred eighty days after notifying the department of an intent to conduct the demonstration; and

d. If the department intends to grant a variance under this section:

(1) The department will inform the public, through a newspaper notice, of the availability of the demonstration for a variance. The notice shall be placed in a daily or weekly major local newspaper of general circulation and shall provide at least thirty days from the date of the notice for the public to review and comment on the demonstration for a variance. The department also will hold a public hearing, in response to a request or at the department's discretion, whenever such a hearing might clarify one or more issues concerning the demonstration for a variance. Public notice of the hearing will be given at least thirty days prior to the date of the hearing and may be given at the same time as notice of the opportunity for the public to review and comment on the demonstration. These two notices may be combined.

(2) The department will approve or disapprove the request for a variance within ninety days of receipt of the demonstration from the owner or operator and will notify in writing the owner or operator and each person who submitted written comments or requested notice of the variance decision. If the demonstration for a variance is incomplete or does not include sufficient information, the ninety-day time period will begin when the department receives a complete demonstration, including all information necessary to make a final determination. If the public comment period is extended, the ninety-day time period will be similarly extended.

(3) If a variance is approved, the department will require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.

9. All tank systems, until such time as secondary containment that meets the requirements of this section is provided, must comply with the following:

a. For nonenterable underground tanks, a leak test that meets the requirements of subdivision e of subsection 2 of section 33-24-05-104 must be conducted at least annually.

b. For other than nonenterable underground tanks, the owner or operator shall either conduct a leak test as in subdivision a or develop a schedule and procedure for an assessment of the overall condition of the tank system by a qualified professional engineer. The schedule and procedure must be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The owner or operator shall remove the stored waste from the tank, if necessary, to allow the condition of all

internal tank surfaces to be assessed. The frequency of these assessments must be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection, and the characteristics of the waste being stored or treated.

c. For ancillary equipment, a leak test or other integrity assessment as approved by the department must be conducted by a qualified professional engineer at least annually.

[Note: The practices described in the American petroleum institute publication guide for inspection of refinery equipment, chapter XIII, "Atmospheric and Low-Pressure Storage Tanks", fourth edition 1981, may be used, where applicable, as guidelines for assessing the overall condition of the tank system.]

d. The owner or operator shall maintain on file at the facility a record of the results of the assessments conducted in accordance with subdivisions a through c.

e. If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in subdivisions a through c, the owner or operator shall comply with the requirements of section 33-24-05-109.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-107. General operating requirements.

1. Hazardous waste or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.

2. The owner or operator shall use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:

   a. Spill prevention controls (for example, check valves, dry disconnect couplings);

   b. Overfill prevention controls (for example, level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

   c. Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

3. The owner or operator shall comply with the requirements of section 33-24-05-109 if a leak or spill occurs in the tank system.

History: Effective January 1, 1984; amended effective December 1, 1988; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-108. Inspections.

1. The owner or operator shall develop and follow a schedule and procedure for inspecting overfill controls.

2. The owner or operator shall inspect at least once each operating day data gathered from monitoring and leak detection equipment (for example, pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

[Note: Subsection 3 of section 33-24-05-06 requires the owner or operator to remedy any deterioration or malfunction the owner or operator finds. Section 33-24-05-109 requires the owner or operator to notify the department within twenty-four hours of confirming a leak. Also, 40 CFR 302 may require the owner or operator to notify the national response center of a release.]

3. In addition, except as noted under subsection 4, the owner or operator must inspect at least once each operating day:

   a. Above ground portions of the tank system, if any, to detect corrosion or releases of waste.

   b. The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (for example, dikes) to detect erosion or signs of releases of hazardous waste (for example, wet spots, dead vegetation).

4. Owners or operators of tank systems that either use leak detection systems to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly those areas described in subdivisions a and b of subsection 3. Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.

5. Ancillary equipment that is not provided with secondary containment, as described in subdivisions a through d of subsection 6 of section 33-24-05-106, must be inspected at least once each operating day.

6. The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

   a. The proper operation of the cathodic protection system must be confirmed within six months after initial installation and annually thereafter; and

   b. All sources of impressed current must be inspected or tested, or both, as appropriate, at least bimonthly (for example, every other month).

   [Note: The practices described in the national association of corrosion engineers standard, "Recommended Practice P-028-85 Control of External Corrosion on Metallic, Buried, Partially Buried, or Submerged Liquid Storage Systems", and American petroleum institute publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", may be used where applicable, as guidelines in maintaining and inspecting cathodic protection systems.]

7. The owner or operator shall document in the operating record of the facility an inspection of those items in subsections 1 through 3.

History: Effective January 1, 1984; amended effective December 1, 1988; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-109. Response to leaks or spills and disposition of leaking or unfit-for-use tank systems.

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator shall satisfy the following requirements:

1. **Cessation of use; prevent flow or addition of wastes.** The owner or operator shall immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

2. **Removal of waste from tank system or secondary containment system.**

   a. If the release was from the tank system, the owner/operator shall, within twenty-four hours after detection of the leak or, if the owner/operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

   b. If the material released was to a secondary containment system, all released materials must be removed within twenty-four hours or in as timely a manner as is possible to prevent harm to human health and the environment.

3. **Containment of visible releases to the environment.** The owner/operator shall immediately conduct a visual inspection of the release and, based upon that inspection:

   a. Prevent further migration of leak or spill to soils or surface water; and

   b. Remove, and properly dispose of, any visible contamination of the soil or surface water.

4. **Notifications, reports.**

   a. Any release to the environment, except as provided in subdivision b, must be reported to the department within twenty-four hours of its detection. The release should also be reported pursuant to 40 CFR 302.

   b. A leak or spill of hazardous waste is exempted from the requirements of this subsection if it is:

      (1) Less than or equal to a quantity of one pound; and

      (2) Immediately contained and cleaned up.

   c. Within thirty days of detection of a release to the environment, a report containing the following information must be submitted to the department:

      (1) Likely route of migration of the release;

      (2) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

      (3) Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within thirty days, these data must be submitted to the department as soon as they become available;

      (4) Proximity to downgradient drinking water, surface water, and populated areas; and

(5) Description of response actions taken or planned.

5. **Provision of secondary containment, repair, or closure.**

   a. Unless the owner/operator satisfies the requirements of subdivisions b through d, the tank system must be closed in accordance with section 33-24-05-110.

   b. If the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

   c. If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

   d. If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/operator shall provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of section 33-24-05-106 before it can be returned to service unless the source of the leak is an aboveground portion of a leak system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of subsection 6 are satisfied. If a component is replaced to comply with the requirements of this subdivision, that component must satisfy the requirements for new tank systems or components in sections 33-24-05-105 and 33-24-05-106. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection, (for example, the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with section 33-24-05-106 prior to being returned to use.

6. **Certification of major repairs.** If the owner/operator has repaired a tank system in accordance with subsection 5, and the repair has been extensive (for example, installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by a qualified professional engineer in accordance with subsection 4 of section 33-24-06-03 that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be placed in the operating record and maintained until closure of the facility.

History: Effective January 1, 1984; amended effective December 1, 1988; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-110. Closure and postclosure care.

1. At closure of a tank system, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as a hazardous waste, unless subsection 4 of section 33-24-02-03 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in sections 33-24-05-59 through 33-24-05-88.

2. If the owner or operator demonstrates that not all contaminated soil can be practicably removed or decontaminated as required in subsection 1, then the owner or operator shall close the tank system and perform postclosure care in accordance with the closure and

postclosure care requirements that apply to landfills under section 33-24-05-180. In addition, for the purposes of closure, postclosure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator shall meet all the requirements for landfills specified in sections 33-24-05-59 through 33-24-05-88.

3. If an owner or operator has a tank system that does not have secondary containment that meets the requirements of subsections 2 through 6 of section 33-24-05-106 and has not been granted a variance from the secondary containment requirements in accordance with subsection 7 of section 33-24-05-106, then:

   a. The closure plan for the tank system must include both a plan for complying with subsection 1 and a contingent plan for complying with subsection 2;

   b. A contingent postclosure plan for complying with subsection 2 must be prepared and submitted as part of the permit application;

   c. The cost estimates calculated for closure and postclosure care must reflect the cost of complying with the contingent closure plan and the contingent postclosure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under subsection 1;

   d. Financial assurance must be based on the cost estimates in subdivision c; and

   e. For the purposes of the contingent closure and postclosure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, postclosure, and financial responsibility requirements for landfills under sections 33-24-05-59 through 33-24-05-88.

History: Effective October 1, 1986; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-111. Special requirements for ignitable or reactive waste.

1. Ignitable or reactive wastes may not be placed in tank systems, unless:

   a. The waste is treated, rendered, or mixed before or immediately after placement in the tank systems so that:

      (1) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive wastes under sections 33-24-02-11 or 33-24-02-13; and

      (2) Subsection 2 of section 33-24-05-08 is complied with;

   b. The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the wastes to ignite or react; or

   c. The tank system is used solely for emergencies.

2. The owner or operator of the facility where ignitable or reactive waste is stored or treated in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in tables 2-1 through 2-6 of the national fire protection association's "flammable and combustible liquids code", (1977 or 1981), incorporated by reference, see section 33-24-01-05.

History: Effective December 1, 1988.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-112. Special requirements for incompatible wastes.

1. Incompatible wastes, or incompatible wastes and materials, may not be placed in the same tank system, unless subsection 2 of section 33-24-05-08 is complied with.

2. Hazardous waste may not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless subsection 2 of section 33-24-05-08 is complied with.

History: Effective December 1, 1988.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-113. Waste analysis and trial tests.

In addition to performing the waste analyses required by section 33-24-05-04, the owner or operator shall, whenever a tank system is to be used to treat chemically or to store a hazardous waste that is substantially different from waste previously treated or stored in that tank system or to be used to treat chemically a hazardous waste with a substantially different process than any previously used in that tank system:

1. Conduct waste analyses and trial treatment or storage tests (for example, bench scale or pilot-plant scale tests); or

2. Obtain written, documented information on similar wastes under similar operating conditions to show that the proposed treatment or storage will meet the requirements of subsection 1 of section 33-24-05-107.

History: Effective December 1, 1988; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-114. Special requirements for generators of between one hundred and one thousand kilograms per month that accumulate hazardous waste in tanks.

1. The requirements of this section apply to small quantity generators of more than one hundred kilograms, but less than one thousand kilograms of hazardous waste in a calendar month, that accumulate hazardous waste in tanks for less than one hundred eighty days (or two hundred seventy days if the generator must ship the waste greater than two hundred miles), and do not accumulate over six thousand kilograms onsite at any time.

2. Generators of between one hundred and one thousand kilograms per month hazardous waste shall comply with the following general operating requirements:

   a. Treatment or storage of hazardous waste in tanks must comply with subsection 2 of section 33-24-05-08.

   b. Hazardous wastes or treatment reagents may not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life.

   c. Uncovered tanks must be operated to ensure at least sixty centimeters [2 feet] of freeboard, unless the tank is equipped with a containment structure (for example, dike or trench), a drainage control system, or a diversion structure (for example, standby tank)

with a capacity that equals or exceeds the volume of the top sixty centimeters [2 feet] of the tank.

d. Where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow (for example, waste feed cutoff system or bypass system to a standby tank).

[Note: These systems are intended to be used in the event of a leak or overflow from the tank due to a system failure (for example, a malfunction in the treatment process, a crack in the tank, etc.).]

3. Generators of between one hundred and one thousand kilograms per month accumulating hazardous waste in tanks shall inspect, where present:

a. Discharge control equipment (for example, waste feed cutoff systems, bypass systems, and drainage systems) at least once each operating day to ensure that it is in good working order;

b. Data gathered from monitoring equipment (for example, pressure and temperature gauges) at least once each operating day to ensure that the tank is being operated according to its design;

c. The level of waste in the tank at least once each operating day to ensure compliance with subdivision c of subsection 2;

d. The construction materials of the tank at least weekly to detect corrosion or leaking of fixtures or seams; and

e. The construction materials of, and the area immediately surrounding, discharge confinement structures (for example, dikes) at least weekly to detect erosion or obvious signs of leakage (for example, wet spots or dead vegetation).

4. Generators of between one hundred and one thousand kilograms per month accumulating hazardous waste in tanks must, upon closure of the facility, remove all hazardous waste from tanks, discharge control equipment, and discharge confinement structures.

[Note: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with subsection 3 or 4 of section 33-24-02-03 that any solid waste removed from the owner's or operator's tank is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of chapters 33-24-03 through 33-24-06.]

5. Generators of between one hundred and one thousand kilograms per month shall comply with the following special requirements for ignitable or reactive waste:

a. Ignitable or reactive waste may not be placed in a tank, unless:

(1) The waste is treated, rendered, or mixed before or immediately after placement in a tank so that (a) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive wastes under section 33-24-02-11 or 33-24-02-13, and (b) subsection 2 of section 33-24-05-08 is complied with;

(2) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(3) The tank is used solely for emergencies.

b. The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks shall comply with the buffer zone requirements for tanks contained in tables 2-1 through 2-6 of the national fire protection association's "flammable and combustible liquids code" (1977 or 1981). (Incorporated by reference, see section 33-24-01-05.)

6. Generators of between one hundred and one thousand kilograms per month must comply with the following special requirements for incompatible wastes:

   a. Incompatible wastes, or incompatible wastes and materials, (see appendix III for examples) may not be placed in the same tank, unless subsection 2 of section 33-24-05-08 is complied with; and

   b. Hazardous waste may not be placed in an unwashed tank which previously held an incompatible waste or material unless subsection 2 of section 33-24-05-08 is complied with.

History: Effective December 1, 1988; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-115. Air emission standards.

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the requirements of sections 33-24-05-400 through 33-24-05-474.

History: Effective January 1, 1984; amended effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-116. [Reserved]

33-24-05-117. [Reserved]

33-24-05-118. Applicability of surface impoundment requirements.

Sections 33-24-05-118 through 33-24-05-129 apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as section 33-24-05-01 provides otherwise.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; January 1, 1994; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-119. Design and operating requirements.

1. Any surface impoundment that is not covered by subsection 3 must have a liner for all portions of the impoundment (except for existing portions of such impoundments). The liner must be designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into adjacent subsurface soil or ground water or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with subdivision a of subsection 1 of section 33-24-05-122. For impoundments that will be closed in accordance with subdivision b of

subsection 1 of section 33-24-05-122, the liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner must be:

a. Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

b. Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

c. Installed to cover all surrounding earth likely to be in contact with the waste or leachate.

2. The owner or operator may be exempted from the requirements of subsection 1 if the department finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (as defined in section 33-24-05-50) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the department will consider:

a. The nature and quantity of the wastes;

b. The proposed alternate design and operation;

c. The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and ground water or surface water; and

d. All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

3. The owner or operator of each new surface impoundment unit on which construction commences after January 29, 1992, each lateral expansion of a surface impoundment unit on which construction commences after July 29, 1992, and each replacement of an existing surface impoundment unit that is to commence reuse after July 29, 1992, must install two or more liners and a leachate collection and removal system between such liners. "Construction commences" is as defined in section 33-24-01-04 under "existing facility".

a. Liner.

(1) The liner system must include:

(a) A top liner designed and constructed of materials (for example, a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and postclosure care period; and

(b) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (for example, a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and postclosure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least three feet

[91.44 centimeters] of compacted soil material with a hydraulic conductivity of no more than $1x10^{-7}$ centimeters per second.

(2) The liners must comply with subdivisions a, b, and c of subsection 1.

b. The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and postclosure care period. The requirements for a leak detection system in this subdivision are satisfied by installation of a system that is, at a minimum:

(1) Constructed with a bottom slope of one percent or more;

(2) Constructed of granular drainage materials with a hydraulic conductivity of $1x10^{-1}$ centimeters per second or more and a thickness of twelve inches [30.5 centimeters] or more; or constructed of synthetic or geonet drainage materials with a transmissivity of $3x10^{-4}$ meters squared per second or more;

(3) Constructed of materials that are chemically resistant to the waste managed in the surface impoundment and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes and any waste cover materials or equipment used at the surface impoundment;

(4) Designed and operated to minimize clogging during the active life and postclosure care period; and

(5) Constructed with a sump or sumps and liquid removal methods (for example, pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump or sumps. The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

c. The owner or operator shall collect and remove pumpable liquids in the sumps to minimize the head on the bottom liner.

d. The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

4. The department may approve alternative design or operating practices to those specified in subsection 3 if the owner or operator demonstrates to the department that such design and operating practices, together with location characteristics:

a. Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal system specified in subsection 3; and

b. Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

5. The double-liner requirement set forth in subsection 3 may be waived by the department for any monofill, if:

a. The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the toxicity characteristic in section 33-24-02-14; and

b. The monofill meets the following:

(1) The monofill:

(a) Has at least one liner for which there is no evidence that such liner is leaking. For the purposes of this paragraph, the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of subsection 3 on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner, at the closure of such impoundment, the owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment will comply with appropriate postclosure requirements, including ground water monitoring and corrective action;

(b) Is located more than one-quarter mile [.40 kilometer] from an "underground source of drinking water" (as that term is defined in 40 CFR section 270.2); and

(c) Is in compliance with generally applicable ground water monitoring requirements for facilities with hazardous waste permits under chapter 33-24-06; or

(2) The owner or operator demonstrates that the monofill is located, designed, and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

6. The owner or operator of any replacement surface impoundment unit is exempt from subsection 3 if:

a. The existing unit was constructed in compliance with the design standards of sections 33-24-05-118 through 33-24-05-143, 33-24-05-160 through 33-24-05-190, and the applicable requirements of subsection 5 of section 33-24-06-16; and

b. There is no reason to believe that the liner is not functioning as designed.

7. A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error.

8. A surface impoundment must have dikes that are designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.

9. The department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-120. Monitoring and inspection.

1. During construction and installation, liners (except in the case of existing portions of surface impoundments exempt from subsection 1 of section 33-24-05-119) and cover systems (for example, membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (for example, holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

   a. Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

   b. Soil-based and admixed liners and covers must be inspected for imperfections, including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.

   These inspections must be conducted by a qualified professional (for example, registered professional engineer).

2. While a surface impoundment is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

   a. Deterioration, malfunctions, or improper operation of overtopping control systems;

   b. Sudden drops in the level of the impoundments contents;

   c. The presence of liquids in leak detection systems; and

   d. Severe erosion or other signs of deterioration in dikes or other containment devices.

3. Prior to the issuance of a permit, and after any period of time greater than six months during which the impoundment was not in service, the owner or operator shall obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification must establish, in particular, that the dike:

   a. Will withstand the stress of the pressure exerted by the types and amounts of waste to be placed in the impoundment; and

   b. Will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

4. An owner or operator required to have a leak detection system shall comply with the following:

   a. An owner or operator required to have a leak detection system under subsection 3 or 4 of section 33-24-05-119 must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

   b. After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the

sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semiannually. If at any time during the postclosure care period the pump operating level is exceeded at units on quarterly or semiannual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

c. "Pump operating level" is a liquid level proposed by the owner or operator and approved by the department based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.

History: Effective January 1, 1984; amended effective December 1, 1991; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-121. Emergency repairs - Contingency plans.

1. A surface impoundment must be removed from service in accordance with subsection 2 when:

   a. The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment; or

   b. The dike leaks.

2. When a surface impoundment must be removed from service as required by subsection 1, the owner or operator shall:

   a. Immediately shut off the flow or stop the addition of wastes into the impoundment;

   b. Immediately contain any surface leakage which has occurred or is occurring;

   c. Immediately stop the leak;

   d. Take any other necessary steps to stop or prevent catastrophic failure;

   e. If a leak cannot be stopped by any other means, empty the impoundment; and

   f. Notify the department of the problem in writing within seven days after detecting the problem.

3. As part of the contingency plan required in sections 33-24-05-26 through 33-24-05-36, the owner or operator shall specify a procedure for complying with the requirements of subsection 2.

4. No surface impoundment that has been removed from service in accordance with the requirements of this section may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:

   a. If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with subsection 3 of section 33-24-05-120.

   b. If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:

(1) For any existing portion of the impoundment, a liner must be installed in compliance with subsection 1 of section 33-24-05-119; and

(2) For any other portion of the impoundment, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.

5. A surface impoundment that has been removed from service in accordance with the requirements of this section and that is not being repaired must be closed in accordance with the provisions of section 33-24-05-122.

History: Effective January 1, 1984; amended effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-122. Closure and postclosure care.

1. At closure, the owner or operator shall:

   a. Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless subsection 4 of section 33-24-02-03 applies; or

   b. Comply with the following:

      (1) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

      (2) Stabilize remaining wastes to a bearing capacity sufficient to support final cover; and

      (3) Cover the surface impoundment with a final cover designed and constructed to:

         (a) Provide long-term minimization of the migration of liquids through the closed impoundment;

         (b) Function with minimum maintenance;

         (c) Promote drainage and minimize erosion or abrasion of the final cover;

         (d) Accommodate settling and subsidence so that the cover's integrity is maintained; and

         (e) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

2. If some waste residues or contaminated materials are left in place at final closure, the owner or operator shall comply with all postclosure requirements contained in sections 33-24-05-66 through 33-24-05-69, including maintenance and monitoring throughout the postclosure care period (specified in the permit under section 33-24-05-66). The owner or operator shall:

   a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

   b. Maintain and monitor the leak detection system in accordance with paragraph 4 of subdivision b of subsection 3 of section 33-24-05-119, subdivision c of subsection 3 of section 33-24-05-119, and subsection 4 of section 33-24-05-120, and comply with all

other applicable leak detection system requirements of sections 33-24-05-118 through 33-24-05-129;

c. Maintain and monitor the ground water monitoring system and comply with all other applicable requirements of sections 33-24-05-47 through 33-24-05-58; and

d. Prevent run-on and runoff from eroding or otherwise damaging the final cover.

3. The owner or operator shall also meet the following requirements:

a. If an owner or operator plans to close a surface impoundment in accordance with subdivision a of subsection 1, and the impoundment does not comply with the liner requirements of subsection 1 of section 33-24-05-119 and is not exempt from them in accordance with subsection 2 of that section, then:

(1) The closure plan for the impoundment under section 33-24-05-61 must include both a plan for complying with subdivision a of subsection 1 and a contingent plan for complying with subdivision b of subsection 1 in case not all contaminated subsoils can be practicably removed at closure; and

(2) The owner or operator shall prepare a contingent postclosure plan under section 33-24-05-67 for complying with subsection 2 in case not all contaminated subsoils can be practicably removed at closure.

b. The cost estimates calculated under section 33-24-05-76 for closure and postclosure care of an impoundment subject to this section must include the cost of complying with the contingent closure plan and the contingent postclosure plan, but are not required to include the cost of expected closure under subdivision a of subsection 1.

History: Effective October 1, 1986; amended effective December 1, 1988; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-123. Special requirements for ignitable or reactive waste.

Ignitable or reactive waste may not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of sections 33-24-05-250 through 33-24-05-299; and:

1. The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

a. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under section 33-24-02-11 or 33-24-02-13; and

b. Subsection 2 of section 33-24-05-08 is complied with; or

2. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; or

3. The surface impoundment is used solely for emergencies.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-124. Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials (see appendix III for examples of incompatible wastes and materials), may not be placed in the same surface impoundment, unless the owner or operator complies with subsection 2 of section 33-24-05-08.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-125. Special requirements for hazardous wastes F020, F021, F022, F023, F026, and F027.

1. Hazardous wastes F020, F021, F022, F023, F026, and F027 must not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the department pursuant to the standards set out in this subsection, and in accordance, with all other applicable requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05–550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819. The factors to be considered are:

    a. The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or volatilize or escape into the atmosphere;

    b. The attenuative properties of underlying and surrounding soils or other materials;

    c. The mobilizing properties of other materials codisposed with these wastes; and

    d. The effectiveness of additional treatment, design, or monitoring techniques.

2. The department may determine that additional design, operating, and monitoring requirements are necessary for surface impoundments managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

History: Effective July 1, 1997; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-126. Action leakage rate.

1. The department shall approve an action leakage rate for surface impoundment units subject to subsection 3 or 4 of section 33-24-05-119. The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot [.3048 meters]. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (for example, slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system, and proposed response actions (for example, the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

2. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under subsection 4 of section 33-24-05-120 to an average daily flow rate (gallons per acre per day) for each sump. Unless the department approves a different calculation, the average daily flow rate for

each sump must be calculated weekly during the active life and closure period, and if the unit is closed in accordance with subsection 2 of section 33-24-05-122, monthly during the postclosure care period when monthly monitoring is required under subsection 4 of section 33-24-05-120.

History: Effective July 1, 1997; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-127. Response actions.

1. The owner or operator of surface impoundment units subject to subsection 3 or 4 of section 33-24-05-119 must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in subsection 2.

2. If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

   a. Notify the department in writing of the exceedance within seven days of the determination;

   b. Submit a preliminary written assessment to the department within fourteen days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

   c. Determine to the extent practicable the location, size, and cause of any leak;

   d. Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

   e. Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

   f. Within thirty days after the notification that the action leakage rate has been exceeded, submit to the department the results of the analyses specified in subdivisions c, d, and e, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the department a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak or remediation determinations, or both, in subdivisions c, d, and e of subsection 2, the owner or operator must:

   a. Assess and conduct the following:

      (1) Assess the source of liquids and amounts of liquids by source;

      (2) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

      (3) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

   b. Document why such assessments are not needed.

History: Effective July 1, 1997; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-128. Air emission standards.

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the requirements of sections 33-24-05-420 through 33-24-05-474.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-129. [Reserved]

33-24-05-130. Applicability of waste pile requirements.

1. Sections 33-24-05-130 through 33-24-05-143 apply to owners or operators of facilities that store or treat hazardous waste in piles, except as section 33-24-05-01 provides otherwise.

2. Sections 33-24-05-130 through 33-24-05-143 do not apply to owners and operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation under sections 33-24-05-176 through 33-24-05-190.

3. The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither runoff nor leachate is generated is not subject to regulation under section 33-24-05-131 or under sections 33-24-05-47 through 33-24-05-58, provided that:

   a. Liquids or materials containing free liquids are not placed in the pile;

   b. The pile is protected from surface water run-on by the structure or in some other manner;

   c. The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and

   d. The pile will not generate leachate through decomposition or other reactions.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-131. Design and operating requirements.

1. A waste pile (except for an existing portion of a waste pile) must have:

   a. A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility. The liner must be:

      (1) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or

leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(2) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(3) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

b. A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. The department will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed one foot [.3048 meters]. The leachate collection and removal system must be:

(1) Constructed of materials that are:

(a) Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and

(b) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and

(2) Designed and operated to function without clogging through the scheduled closure of the waste pile.

2. The owner or operator of each new waste pile unit , each lateral expansion of a waste pile unit, and each replacement of an existing waste pile unit, must install two or more liners and a leachate collection and removal system above and between such liners.

a. Liners.

(1) The liner system must include:

(a) A top liner designed and constructed of materials (for example, a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and postclosure care period; and

(b) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (for example, a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and postclosure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least three feet [91.44 centimeters] of compacted soil material with a hydraulic conductivity of no more than $1x10^{-7}$ centimeters per second.

(2) The liners must comply with paragraphs 1, 2, and 3 of subdivision a of subsection 1.

b. The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and postclosure care period. The department will specify design and operating conditions in the permit to ensure that the leachate depth over the

liner does not exceed one foot [.3048 meters]. The leachate collection and removal system must comply with paragraphs 3 and 4 of subdivision c.

c. The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and postclosure care period. The requirements for a leak detection system in this subsection are satisfied by installation of a system that is, at a minimum:

(1) Constructed with a bottom slope of one percent or more;

(2) Constructed of granular drainage materials with a hydraulic conductivity of $1x10^{-2}$ centimeters per second or more and a thickness of twelve inches [30.5 centimeters] or more; or constructed of synthetic or geonet drainage materials with a transmissivity of $3x10^{-5}$ square meters per second or more;

(3) Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;

(4) Designed and operated to minimize clogging during the active life and postclosure care period; and

(5) Constructed with sumps and liquid removal methods (for example, pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump or sumps. The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

d. The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

e. The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

3. The department may approve alternative design or operating practices to those specified in subsection 2 if the owner or operator demonstrates to the department that such design and operating practices, together with location characteristics:

a. Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in subsection 2; and

b. Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

4. Subsection 2 does not apply to monofills that are granted a waiver by the department in accordance with subsection 5 of section 33-24-05-119.

5. The owner or operator of any replacement waste pile unit is exempt from subsection 2 if:

a. The existing unit was constructed in compliance with the design standards of sections 33-24-05-118 through 33-24-05-143, 33-24-05-160 through 33-24-05-190, and the applicable requirements of subsection 5 of section 33-24-06-16; and

b. There is no reason to believe that the liner is not functioning as designed.

6. The owner or operator will be exempted from the requirements of subsection 1, if the department finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see section 33-24-05-50) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the department will consider:

   a. The nature and quantity of the waste;

   b. The proposed alternate design and operation;

   c. The hydrogeologic setting of the facility, including attenuative capacity and thickness of the liners and soils present between the pile and ground water or surface water; and

   d. All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

7. The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portions of the pile during peak discharge from at least a twenty-five-year storm.

8. The owner or operator must design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a twenty-four-hour, twenty-five-year storm.

9. Collection and holding facilities (for example, tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

10. If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the pile to control wind dispersal.

11. The department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 1994; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-132. Monitoring and inspection.

1. During construction or installation, liners (except in the case of existing portions of piles exempt from subsection 1 of section 33-24-05-131) and cover systems (for example, membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections, for example, holes, cracks, thin spots, or foreign materials. Immediately after construction or installation:

   a. Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

b. Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.

2. While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

   a. Deterioration, malfunctions, or improper operation of run-on and runoff control systems;

   b. Proper functioning of wind dispersal control systems where present; and

   c. The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

3. An owner or operator required to have a leak detection system under subsection 2 of section 33-24-05-131 must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 1994; July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-133. Special requirements for ignitable or reactive waste.

Ignitable or reactive waste may not be placed in a waste pile unless the waste or waste pile satisfies all applicable requirements of sections 33-24-05-250 through 33-24-05-299.

1. The waste is treated, rendered, or mixed before or immediately after placement in the pile so that:

   a. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under section 33-24-02-11 or 33-24-02-13; and

   b. Subsection 2 of section 33-24-05-08 is complied with; or

2. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

History: Effective January 1, 1984; amended effective December 1, 1991.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-134. Special requirements for incompatible wastes.

1. Incompatible wastes, or incompatible wastes and materials, may not be placed in the same pile unless subsection 2 of section 33-24-05-08 is complied with.

2. A pile of hazardous waste that is incompatible with any waste or other material stored nearby in containers, other piles, open tanks, or surface impoundments must be separated from the other material, or protected from them by means of a dike, berm, wall, or other device.

3. Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with subsection 2 of section 33-24-05-08.

History: Effective January 1, 1984; amended effective December 1, 1988.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-135. Closure and postclosure care.

1. At closure, the owner or operator must remove or decontaminate all waste residue, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless subsection 4 of section 33-24-02-03 applies.

2. If, after removing or decontaminating all residues and making all reasonable efforts to affect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection 1, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall close the facility and perform postclosure care in accordance with the closure and postclosure care requirements that apply to landfills (section 33-24-05-180).

3. In addition:

   a. The owner or operator of a waste pile that does not comply with the liner requirements of subdivision a of subsection 1 of section 33-24-05-131 and is not exempt from them in accordance with subsection 3 of section 33-24-05-130 or subsection 6 of section 33-24-05-131, shall:

      (1) Include in the closure plan for the pile under section 33-24-05-61 both a plan for complying with subsection 1 and a contingent plan for complying with subsection 2 in case not all contaminated subsoil can be practicably removed at closure; and

      (2) Prepare a contingent postclosure plan under section 33-24-05-67 for complying with subsection 2 in case not all contaminated subsoil can be practicably removed at closure.

   b. The cost estimates calculated under section 33-24-05-76 for closure and postclosure care of a pile subject to this subsection must include the cost of complying with the contingent closure plan and the contingent postclosure plan, but are not required to include the cost of expected closure under subsection 1.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-136. Special requirements for hazardous wastes F020, F021, F022, F023, F026, and F027.

1. Hazardous wastes F020, F021, F022, F023, F026, and F027 must not be placed in waste piles that are not enclosed (as defined in subsection 3 of section 33-24-05-130) unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the department pursuant to the standards set out in this subsection and in accord with all other applicable requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819. The factors to be considered are:

   a. The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

   b. The attenuative properties of underlying and surrounding soils or other materials;

   c. The mobilizing properties of other materials codisposed with these wastes; and

d. The effectiveness of additional treatment, design, or monitoring techniques.

2. The department may determine that additional design, operating, and monitoring requirements are necessary for piles managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

History: Effective October 1, 1986; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-137. Action leakage rate.

1. The department shall approve an action leakage rate for waste pile units subject to subsection 2 or 3 of section 33-24-05-131. The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot [.3048 meters]. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (for example, slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system, and proposed response actions (for example, the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

2. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under subsection 3 of section 33-24-05-132 to an average daily flow rate (gallons per acre per day) for each sump. Unless the department approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.

History: Effective January 1, 1994; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-138. Response actions.

1. The owner or operator of waste pile units subject to subsection 2 or 3 of section 33-24-05-131 must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in subsection 2.

2. If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

   a. Notify the department in writing of the exceedance within seven days of the determination;

   b. Submit a preliminary written assessment to the department within fourteen days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

   c. Determine to the extent practicable the location, size, and cause of any leak;

   d. Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

e. Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and

f. Within thirty days after the notification that the action leakage rate has been exceeded, submit to the department the results of the analyses specified in subdivisions c, d, and e, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the department a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak or remediation determinations, or both, in subdivisions c, d, and e of subsection 2, the owner or operator must:

a. Assess and conduct the following:

(1) Assess the source of liquids and amounts of liquids by source;

(2) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(3) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

b. Document why such assessments are not needed.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-139. [Reserved]

33-24-05-140. [Reserved]

33-24-05-141. [Reserved]

33-24-05-142. [Reserved]

33-24-05-143. [Reserved]

33-24-05-144. Applicability of incinerator requirements.

1. Sections 33-24-05-144 through 33-24-05-159 apply to owners or operators of hazardous waste incinerators, except as section 33-24-05-01 provides otherwise.

2. Integration of the maximum achievable control technology standards.

a. Except as provided by subdivisions b through d, the standards of sections 33-24-05-144 through 33-24-05-159 do not apply to a new hazardous waste incineration unit that becomes subject to hazardous waste permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing hazardous waste incineration unit demonstrates compliance with the maximum achievable control technology requirements of 40 CFR part 63, subpart EEE by conducting a comprehensive performance test and submitting to the department a notification of compliance under 40 CFR

sections 63.1207(j) and 63.1210(d) documenting compliance with the requirements of 40 CFR part 63, subpart EEE. Nevertheless, even after this demonstration of compliance with the maximum achievable control technology standards, hazardous waste permit conditions that were based on the standards of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819 will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.

b. The maximum achievable control technology standards do not replace the closure requirements of section 33-24-05-151 or the applicable requirements of sections 33-24-05-01 through 33-24-05-88 and sections 33-24-05-420 through 33-24-05-474.

c. The particulate matter standard of subsection 3 of section 33-24-05-147 remains in effect for incinerators that elect to comply with the alternative to the particulate matter standard under 40 CFR sections 63.1206(b)(14) and 63.1219(e).

d. The following requirements remain in effect for startup, shutdown, and malfunction events if a permittee elects to comply with paragraph 1 of subdivision a of subsection 1 of section 33-24-06-100 to minimize emissions of toxic compounds from these events:

(1) Subsection 1 of section 33-24-05-149 requiring that an incinerator operate in accordance with operating requirements specified in the permit; and

(2) Subsection 3 of section 33-24-05-149 requiring compliance with emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes.

3. After consideration of the waste analysis included with the permit application, and unless the department finds that the waste will pose a threat to human health or the environment when burned in an incinerator, the department may, on a case-by-case basis, exempt the applicant from some or all of the requirements of sections 33-24-05-144 through 33-24-05-159, except sections 33-24-05-145 and 33-24-05-151 if:

a. The waste to be burned is hazardous (either listed in or fails the characteristic tests in chapter 33-24-02) solely because it is:

(1) Ignitable, or corrosive, or both; or

(2) Reactive for characteristic other than those in subdivisions d and e of subsection 1 of section 33-24-02-13, and will not be burned when other hazardous wastes are present in the combustion zone; and

b. The waste contains insignificant concentrations of the hazardous constituents listed in appendix V of chapter 33-24-02.

4. The owner or operator of an incinerator may conduct trial burns subject only to the requirements of subsection 2 of section 33-24-06-19.

5. If the waste to be burned is one which is described by subdivision a, b, c, or d of subsection 2 and contains insignificant concentrations of the hazardous constituents listed in appendix V of chapter 33-24-02, then the department may, in establishing permit conditions, exempt the applicant from all requirements of sections 33-24-05-144 through 33-24-05-159, except sections 33-24-05-145 (waste analysis) and 33-24-05-151 (closure), after consideration of the waste analysis included in the permit application, unless the department finds that the waste will pose a threat to human health and the environment when burned in an incinerator.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-145. Waste analysis.

1. As a portion of the trial burn plan or with the permit application, the owner or operator shall have included an analysis of the waste feed sufficient to provide all information required by subdivision b of subsection 2 of section 33-24-06-19 or subdivision w of subsection 2 of section 33-24-06-17. Owners and operators of new hazardous waste incinerators shall provide the information required by subdivision c of subsection 2 of section 33-24-06-19 or subdivision w of subsection 2 of section 33-24-06-17 to the greatest extent possible.

2. Throughout normal operation the owner or operator shall conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limit specified in the permit (under subsection 2 of section 33-24-05-149).

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-146. Designation of principal organic hazardous constituents.

1. Principal organic hazardous constituents in the waste feed must be treated to the extent required by the performance standard specified in section 33-24-05-147.

2. Designation of principal organic hazardous constituents.

   a. For each waste feed to be burned, one or more principal organic hazardous constituents will be specified in the facility's permit from among those constituents listed in chapter 33-24-02, appendix V. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analysis and trial burns or alternative data submitted with the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as principal organic hazardous constituents. Constituents are more likely to be designated as principal organic hazardous constituents if they are present in large quantities or concentrations in the waste.

   b. Trial principal organic hazardous constituents will be designated for performance of trial burns in accordance with the procedure for obtaining trial burn permits in subsection 2 of section 33-24-06-19.

History: Effective January 1, 1984; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-147. Performance standards.

An incinerator burning hazardous waste must be designed, constructed, and maintained so that when operated in accordance with operating requirements specified under section 33-24-05-149 it will meet the following performance standards:

1. a. Except as provided in subdivision b, an incinerator burning hazardous waste must achieve a destruction and removal efficiency of ninety-nine and ninety-nine one hundredths percent for each principal organic hazardous constituent designated (under

section 33-24-05-146) in its permit for each waste feed. The destruction and removal efficiency is determined for each principal organic hazardous constituent from the following equation:

$$DRE = \frac{(W_{in} - W_{out})}{W_{in}} \; x \; 100\%$$

where:

W_{in} = mass feed rate of one principal organic constituent in the waste stream feeding the incinerator, and

W_{out} = mass emission rate of the same principal organic hazardous constituent present in exhaust emissions prior to release to the atmosphere.

b. An incinerator burning wastes F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency of ninety-nine and nine thousand nine hundred and ninety-nine ten thousandths percent for each principal organic hazardous constituent designated (under section 33-24-05-146) in its permit. This performance must be demonstrated on principal organic hazardous constituents that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. Destruction and removal efficiency is determined for each principal organic hazardous constituent from the equation in subdivision a.

2. An incinerator burning hazardous waste and producing stack emissions of more than one and eight-tenths kilograms per hour [4 pounds per hour] of hydrogen chloride must control hydrogen chloride emissions such that the rate of emission is no greater than the larger of either one and eight-tenths kilograms per hour or one percent of the hydrogen chloride in the stack gas prior to entering any pollution control equipment.

3. An incinerator burning hazardous waste must not emit particulate matter in excess of one hundred eighty milligrams per dry standard cubic meter [0.08 grains per dry standard cubic foot] when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_C = P_M \; x \; \frac{14}{21 - Y}$$

where:

P_c = the corrected concentration of particulate matter,

P_M = the measured concentration of particulate matter, and

Y = the measured concentration of oxygen in the stack gas using the Orsat method for oxygen analysis of dry flue gas presented in 40 CFR, part 60, appendix A (method 3) of the federal air pollution control regulations. This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the department will select an appropriate correction procedure to be specified in the facility permit.

4. For purposes of permit enforcement, compliance with the operating requirements specified in the permit under section 33-24-05-149 will be regarded as compliance with this section.

However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of this section may be "information" justifying modification, revocation, or reissuance of a permit under section 33-24-06-12.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-148. Hazardous waste incinerator permits.

1. The owner or operator of a hazardous waste incinerator may burn only waste specified in the permit and only under operating conditions specified for those wastes under section 33-24-05-149, except:

   a. In approved trial burns under subsection 2 of section 33-24-06-19; or

   b. Under exemptions created by section 33-24-05-144.

2. Other hazardous wastes may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with the permit application under subdivision w of subsection 2 of section 33-24-06-17.

3. The permit for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable requirements of sections 33-24-05-144 through 33-24-05-159, including, but not limited to, allowable waste feeds and operating conditions necessary to meet the requirements of section 33-24-05-149, sufficient to comply with the following standards:

   a. For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in subdivision b of this subsection, not to exceed a duration of seven hundred twenty hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of section 33-24-05-147, based on the department's engineering judgment. The department may extend the duration of this period once for up to seven hundred twenty additional hours when good cause for the extension is demonstrated by the applicant.

   b. For the duration of the trial burn the operating requirements must be sufficient to demonstrate compliance with the performance standards of section 33-24-05-147 and must be in accordance with the approved trial burn plan.

   c. For the period immediately following completion of the trial burn and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the department, the operating requirements must be those most likely to ensure compliance with performance standards of section 33-24-05-147 based on the department's engineering judgment.

   d. For the remaining duration of the permit, the operating requirements must be those demonstrated in a trial burn or by alternative data specified in paragraph 3 of subdivision w of subsection 2 of section 33-24-06-17 as sufficient to ensure compliance with the performance standards of section 33-24-05-147.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.

General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-149. Operating requirements.

1. An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in subsection 2 of section 33-24-05-148 and included with a facility's permit application) to be sufficient to comply with the performance standards of section 33-24-05-147.

2. Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of section 33-24-05-147) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits including the following conditions:

   a. Carbon monoxide level in the stack exhaust gas;

   b. Waste feed rate;

   c. Combustion temperature;

   d. An appropriate indicator of combustion gas velocity;

   e. Allowable variation in incinerator system design or operating procedures; and

   f. Such operating requirements as are necessary to ensure that the performance standards of section 33-24-05-147 are met.

3. During startup and shutdown of an incinerator, hazardous waste (except waste exempted in accordance with section 33-24-05-144) may not be fed into the incinerator unless the incinerator is operating within the conditions of operation, (temperature, air feed rate, etc.) specified in the permit.

4. Fugitive emissions from the combustion zone must be controlled by:

   a. Keeping the combustion zone totally sealed against fugitive emissions;

   b. Maintaining a combustion zone pressure lower than atmospheric pressure; or

   c. An alternate means of control demonstrated (with the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

5. An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under subsection 1.

6. An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.

History: Effective January 1, 1984; amended effective December 1, 1988.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-150. Monitoring and inspections.

1. The owner or operator shall conduct, at a minimum, the following monitoring while incinerating hazardous waste:

   a. Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the permit must be monitored on a continuous basis;

   b. Carbon monoxide must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere; and

   c. Upon request by the department, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of section 33-24-05-147.

2. The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be completely inspected at least daily for leaks, spills, fugitive emissions, and signs of tampering.

3. The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the department that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted monthly.

4. This monitoring and inspection data must be recorded and the records must be placed in the operating record required by section 33-24-05-40 and maintained in the operating record for five years.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-151. Closure.

At closure the owner or operator shall remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-152. [Reserved]

33-24-05-153. [Reserved]

33-24-05-154. [Reserved]

33-24-05-155. [Reserved]

33-24-05-156. [Reserved]

33-24-05-157. [Reserved]

33-24-05-158. [Reserved]

33-24-05-159. [Reserved]

33-24-05-160. Applicability of land treatment requirements.

Sections 33-24-05-160 through 33-24-05-175 apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as section 33-24-05-01 provides otherwise.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-161. Treatment program.

1. An owner or operator subject to sections 33-24-05-160 through 33-24-05-175 shall establish a land treatment program that is designed to ensure that hazardous constituents placed in or on the treatment zone are degraded, transformed, or immobilized within the treatment zone. The department will specify in the facility permit the elements of the treatment program, including:

    a. The wastes that are capable of being treated at the unit based on a demonstration under section 33-24-05-162;

    b. Design measures and operating practices necessary to maximize the success of degradation, transformation, and the immobilization processes in the treatment zone in accordance with subsection 1 of section 33-24-05-163; and

    c. Unsaturated zone monitoring provisions meeting the requirements of section 33-24-05-165.

2. The department will specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized under sections 33-24-05-160 through 33-24-05-175. Hazardous constituents are constituents identified in appendix V of chapter 33-24-02 that are reasonably expected to be in or derived from waste placed in or on the treatment zone.

3. The department will specify the vertical and horizontal dimensions of the treatment zone in the facility permit. The treatment zone is the portion of the unsaturated zone below and including the land surface in which the owner or operator intends to maintain the conditions necessary for effective degradation, transformation, or immobilization of hazardous constituents. The maximum depth of the treatment zone must be:

    a. No more than one and five-tenths meters [5 feet] from the initial soil surface; and

    b. More than one meter [3 feet] above the seasonal high water table.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-162. Treatment demonstration.

1. For each waste that will be applied to the treatment zone, the owner or operator shall demonstrate prior to application of the waste that hazardous constituents in the waste can be completely degraded, transformed, or immobilized in the treatment zone.

2. In making this demonstration, the owner or operator may use field tests, laboratory analyses, available data, or, in the case of existing units, operating data. If the owner or operator intends to conduct field tests or laboratory analyses in order to make the demonstration required

under subsection 1 the owner or operator shall obtain a treatment or disposal permit under subsection 3 of section 33-24-06-19. The department will specify in this permit the testing, analytical, design, and operating requirements (including the duration of the tests and analyses, and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure and cleanup activities) necessary to meet the requirements in subsection 3.

3. Any field test or laboratory analysis conducted in order to make a demonstration under subsection 1 must:

   a. Accurately simulate the characteristics and operating conditions for the proposed land treatment unit including:

      (1) The characteristics of the waste (including the presence of constituents in appendix V of chapter 33-24-02);

      (2) The climate of the area;

      (3) The topography of the surrounding area;

      (4) The characteristics of the soil in the treatment zone (including depth); and

      (5) The operating practices to be used at the unit.

   b. Be likely to show that hazardous constituents in the waste to be tested will be completely degraded, transformed, or immobilized in the treatment zone of the proposed land treatment unit; and

   c. Be conducted in a manner that protects human health and the environment considering:

      (1) The characteristics of the waste to be tested;

      (2) The operating and monitoring measures to be taken during the course of the test;

      (3) The duration of the tests;

      (4) The volume of waste used in the test; and

      (5) In the case of field tests, the potential for the migration of hazardous constituents to ground water or surface water.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-163. Design and operating requirements.

The department will specify in the facility permit how the owner or operator will design, construct, operate, and maintain the land treatment unit in compliance with this section.

1. The owner or operator shall design, construct, and maintain the unit to maximize the degradation, transformation, and immobilization of hazardous constituents in the treatment zone. The owner or operator shall design, construct, operate, and maintain the unit in accord with all design and operating conditions that were used in the treatment demonstration under section 33-24-05-162. At a minimum, the department will specify the following in the facility permit:

   a. The rate and method of waste application to the treatment zone;

b. Measures to control soil pH;

c. Measures to enhance microbial or chemical reaction, for example, fertilization, tilling; and

d. Measures to control the moisture content of the treatment zone.

2. The owner or operator shall design, construct, operate, and maintain the treatment zone to minimize runoff from hazardous constituents during the active life of the land treatment unit.

3. The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a twenty-five-year storm.

4. The owner or operator shall design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a twenty-four-hour, twenty-five-year storm.

5. Collection and holding facilities, for example, tanks or basins, associated with the run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

6. If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator shall manage the unit to control wind dispersal.

7. The owner or operator shall inspect the unit weekly and after storms to detect evidence of:

a. Deterioration, malfunctions, or improper operation of run-on or runoff control systems; and

b. Improper functioning of wind dispersal control measures.

History: Effective January 1, 1984; amended effective December 1, 1988; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-164. Food chain crops.

The department may allow the growth of food chain crops in or on the treatment zone only if the owner or operator satisfies the conditions of this section. The department will specify in the facility permit the specific food chain crops which may be grown.

1. The owner or operator shall demonstrate that there is no substantial risk to human health caused by the growth of such crops in or on the treatment zone by demonstrating, prior to the planting of such crops, that hazardous constituents other than cadmium:

a. Will not be transferred to the food or feed portions of the crop by plant uptake or direct contact and will not otherwise be ingested by food chain animals, for example, by grazing; or

b. Will not occur in greater concentrations in or on the food or feed portions of crops grown on the treatment zone than in or on identical portions of the same crops grown on untreated soils under similar conditions in the same region.

2. The owner or operator shall make the demonstration required by subsection 1 prior to the planting of crops at the facility for all constituents identified in appendix V of chapter 33-24-02 that are reasonably expected to be in or derived from waste placed in or on the treatment zone.

3. In making a demonstration under subsection 1, the owner or operator may use field tests, greenhouse studies, available data, or in the case of existing units, operating data, and shall:

   a. Base the demonstration on conditions similar to those present in the treatment zone, including soil characteristics (for example, pH, cation exchange capacity), specific wastes, application rates, application methods, and crops to be grown;

   b. Describe the procedures used in conducting any tests, including the sample collection criteria, sample size, analytical methods, and statistical procedures.

4. If the owner or operator intends to conduct field tests or greenhouse studies in order to make the demonstration required under subsection 1, the owner or operator shall obtain a permit for conducting such activities.

5. The owner or operator shall comply with the conditions of either subdivision a or b if cadmium is contained in wastes applied to the treatment zone:

   a. The following condition must be met:

      (1) The pH of the waste and soil mixture must be 6.5 or greater at the time of each waste application, except for wastes containing cadmium in concentrations of two milligrams per kilogram (dry weight) or less;

      (2) The annual application of cadmium from waste must not exceed five-tenths kilogram per hectare on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food chain crops the annual cadmium rate may not exceed:

         (a) Two kilograms per hectare through June 30, 1984;

         (b) One and twenty-five-hundredths kilograms per hectare during the period from July 1, 1984, through December 31, 1986; or

         (c) Five-tenths kilogram per hectare on and after January 1, 1987; and

      (3) The cumulative application rate of cadmium from waste must not exceed five kilograms per hectare if the waste and soil mixture has a pH of less than 6.5; and

      (4) If the waste and soil mixture has a pH of 6.5 or greater and is maintained at a pH of 6.5 or greater during crop growth, the cumulative application of cadmium from waste must not exceed: Five kilograms per hectare if soil cation exchange capacity is less than five milliequivalents per one hundred grams; ten kilograms per hectare if soil cation exchange capacity is five to fifteen milliequivalents per one hundred grams; and twenty kilograms per hectare if soil cation exchange capacity is greater than fifteen milliequivalents per one hundred grams.

   b. The following conditions must be met:

      (1) Animal feed must be the only food chain crop produced;

      (2) The pH of the waste and soil mixture must be 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later, and this pH level must be maintained whenever food chain crops are grown;

      (3) There must be an operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The operating plan must describe the measures to be taken to safeguard against the possible health hazards from cadmium entering the food chain which may result from alternative land uses; and

(4) Future property owners must be notified by stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food chain crops must not be grown, except in compliance with subdivision b.

History: Effective January 1, 1984; amended effective December 1, 1988; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-165. Unsaturated zone monitoring.

An owner or operator subject to sections 33-24-05-160 through 33-24-05-175 shall establish an unsaturated zone monitoring program to discharge the following responsibilities:

1. The owner or operator shall monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.

   a. The department will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under subsection 2 of section 33-24-05-161.

   b. The department may require monitoring for principal hazardous constituents in lieu of the constituents specified under subsection 2 of section 33-24-05-161. Principal hazardous constituents are hazardous constituents contained in the waste to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation, and immobilization. The department will establish principal hazardous constituents if the department finds, based on waste analyses, treatment demonstrations, or other data that effective degradation, transformation, or immobilization of the principal hazardous constituents will assure treatment of at least equivalent levels for the other hazardous constituents in the wastes.

2. The owner or operator must install an unsaturated zone monitoring system that includes soil monitoring using soil cores, and soil-pore liquid monitoring using devices such as lysimeters. The unsaturated zone monitoring system must consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that:

   a. Represent the quality of background soil-pore liquid quality and the chemical makeup of soil that has not been affected by leakage from the treatment zone; and

   b. Indicate the quality of soil-pore liquid in the chemical makeup of the soil below the treatment zone.

3. The owner or operator shall establish a background value for each hazardous constituent to be monitored under subsection 1. The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.

   a. Background soil values may be based on a one-time sampling at a background plot having characteristics similar to that of the treatment zone.

   b. Background soil-pore liquid values must be based on at least quarterly sampling for one year at a background plot having characteristics similar to those of the treatment zone.

   c. The owner or operator shall express all background values in a form necessary for the determination of statistically significant increases under subsection 6.

d. In taking samples used in the determination of all background values, the owner or operator shall use an unsaturated zone monitoring system that complies with subdivision a of subsection 2.

4. The owner or operator shall conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The department will specify the frequency and timing of soil and soil-pore liquid monitoring in the facility permit after considering the frequency, timing, and rate of waste application and the soil permeability. The owner or operator shall express the results of the soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under subsection 6.

5. The owner or operator shall use consistent sampling and analysis procedures that are designed to ensure sampling results that provide a reliable indication of soil-pore liquid quality and the chemical makeup in the soil below the treatment zone. At a minimum, the owner or operator shall implement procedures and techniques for:

   a. Sample collection;

   b. Sample preservation and shipment;

   c. Analytical procedures; and

   d. Chain of custody control.

6. The owner or operator shall determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under subsection 1 below the treatment zone each time the owner or operator conducts soil monitoring and soil-pore liquid monitoring under subsection 4.

   a. In determining whether a statistically significant increase has occurred, the owner or operator shall compare the value of each constituent as determined under subsection 4 to the background value for that constituent according to the statistical procedures specified in the facility permit under this subsection.

   b. The owner or operator shall determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after completion of sampling. The department will specify that time period in the facility permit after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of the soil and soil-pore liquid samples.

   c. The owner or operator shall determine whether there is a statistically significant increase below the treatment zone using a statistical procedure that provides reasonable confidence that migration from the treatment zone will be identified. The department will specify a statistical procedure in the facility permit that the department finds:

      (1) Is appropriate for the distribution of data used to establish background values; and

      (2) Provides a reasonable balance between the probability of falsely identifying migration from the treatment zone and the probability of failing to identify real migration from the treatment zone.

7. If the owner or operator determines pursuant to subsection 6 that there is a statistically significant increase of hazardous constituents below the treatment zone, the owner or operator shall:

   a. Notify the department of this finding in writing within seven days. The notification must indicate what constituents have shown statistically significant increases.

b. Within ninety days submit to the department an application for a permit modification to modify the operating practices at the facility in order to maximize the success of degradation, transformation, or immobilization processes in the treatment zone.

8. If the owner or operator determines pursuant to subsection 6 that there is a statistically significant increase of hazardous constituents below the treatment zone, the owner or operator may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make this demonstration in addition to, or in lieu of, submitting a permit modification application under subdivision b of subsection 7, the owner or operator is still required to submit a permit modification within the time specified in subdivision b of subsection 7 should the demonstration be unsuccessful. In making this demonstration the owner or operator shall:

   a. Notify the department in writing within seven days of determining a statistically significant increase below the treatment zone that the owner or operator intends to make a determination under this subsection;

   b. Within ninety days submit a report to the department demonstrating that a source other than the regulated units caused the increase or that the increase resulted in error in sampling, analysis, or evaluation;

   c. Within ninety days submit to the department an application for permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and

   d. Continue to monitor in accordance with the unsaturated zone monitoring program established under this section.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-166. Recordkeeping.

The owner or operator shall include hazardous waste application dates and rates in the operating record required under section 33-24-05-40.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-167. Closure and postclosure care.

1. During the closure period the owner or operator shall:

   a. Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under subsection 1 of section 33-24-05-163, except to the extent such measures are inconsistent with subdivision h of this subsection;

   b. Continue all operations in the treatment zone to minimize runoff of hazardous constituents as required under subsection 2 of section 33-24-05-163;

   c. Maintain the run-on control system required under subsection 3 of section 33-24-05-163;

d. Maintain the runoff management system required under subsection 4 of section 33-24-05-163;

e. Control wind dispersal of hazardous waste if required under subsection 6 of section 33-24-05-163;

f. Continue to comply with any prohibitions or conditions concerning growth of food chain crops under section 33-24-05-164;

g. Continue unsaturated zone monitoring in compliance with section 33-24-05-165, except that soil-pore liquid monitoring may be terminated one year after the last application of waste to the treatment zone if, during that year, the soil-pore liquid monitoring shows that no hazardous constituents are leaching from the treatment zone in the soil-pore water; and

h. Establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.

2. For the purpose of complying with section 33-24-05-64, when closure is completed the owner or operator may submit to the department certification by an independent qualified soil scientist, in lieu of a qualified professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

3. During the postclosure care period the owner or operator shall:

a. Continue all operations (including pH control) necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other postclosure care activities;

b. Maintain a vegetative cover over closed portions of the facility;

c. Maintain the run-on control system required under subsection 3 of section 33-24-05-163;

d. Maintain the runoff management system required under subsection 4 of section 33-24-05-163;

e. Control wind dispersal of hazardous waste if required under subsection 6 of section 33-24-05-163;

f. Continue to comply with any prohibitions or conditions concerning growth of food chain crops under section 33-24-05-164; and

g. Continue unsaturated zone monitoring in compliance with section 33-24-05-165 except that soil-pore liquid monitoring may be terminated one year after the last application of waste to the treatment zone if, during that year, the soil-pore liquid monitoring shows that no hazardous constituents are leaching from the treatment zone in the soil-pore water.

4. The owner or operator is not subject to regulation under subsection 3 or subdivision h of subsection 1 if the department finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in subdivision c. The owner or operator may submit such a demonstration to the department at any time during the closure or postclosure care periods. For purposes of this subsection:

a. The owner or operator shall establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under subsection 2 of section 33-24-05-161:

(1) Background soil values may be based on a one-time sampling of the background plot having characteristics similar to those of the treatment zone; and

(2) The owner or operator shall express background values and values for hazardous constituents in the treatment zone in a form necessary for the determination of statistically significant increases under subdivision c;

b. In taking samples used in the determination of background and treatment zone values, the owner or operator shall take samples at a sufficient number of sampling points and at appropriate locations and depths to yield samples that represent the chemical makeup of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively; and

c. In determining whether a statistically significant increase has occurred, the owner or operator shall compare the value of each constituent in the treatment zone to the background value of that constituent using a statistical procedure that provides reasonable confidence that constituent presence in the treatment zone will be identified. The owner or operator shall use a statistical procedure that:

(1) Is appropriate for the distribution of the data used to establish background values; and

(2) Provides a reasonable balance between the probability of falsely identifying hazardous constituent presence in the treatment zone and the probability of failing to identify a real presence in the treatment zone.

5. During closure or postclosure care, or both, the owner or operator is not subject to regulation under sections 33-24-05-47 through 33-24-05-58 if the department finds that the owner or operator satisfies subsection 4 and if unsaturated zone monitoring under section 33-24-05-165 indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

History: Effective January 1, 1984; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-168. Special requirements for ignitable or reactive waste.

The owner or operator may not apply ignitable or reactive waste to the treatment zone unless the waste and the treatment zone meet all applicable requirements of sections 33-24-05-250 through 33-24-05-299; and:

1. The waste is immediately incorporated into the soil so that:

a. The resulting waste mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under section 33-24-02-11 or 33-24-02-13; and

b. Subsection 2 of section 33-24-05-08 is complied with; or

2. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

History: Effective January 1, 1984; amended effective December 1, 1991; January 1, 2016.

General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-169. Special requirements for incompatible wastes.

The owner or operator may not place incompatible wastes or incompatible wastes and materials in or on the same treatment zone unless subsection 2 of section 33-24-05-08 is complied with.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-170. Special requirements for hazardous wastes F020, F021, F022, F023, F026, and F027.

1. Hazardous wastes F020, F021, F022, F023, F026, and F027 must not be placed in a land treatment unit unless the owner or operator operates the facility in accordance with a management plan for these wastes that is approved by the department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819. The factors to be considered are:

   a. The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

   b. The attenuative properties of underlying and surrounding soils or other materials;

   c. The mobilizing properties of other materials codisposed with these wastes; and

   d. The effectiveness of additional treatment, design, or monitoring techniques.

2. The department may determine that additional design, operating, and monitoring requirements are necessary for land treatment facilities managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

History: Effective October 1, 1986; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-171. [Reserved]

33-24-05-172. [Reserved]

33-24-05-173. [Reserved]

33-24-05-174. [Reserved]

33-24-05-175. [Reserved]

33-24-05-176. Applicability of landfill requirements.

Sections 33-24-05-176 through 33-24-05-190 apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as section 33-24-05-01 provides otherwise.

History: Effective January 1, 1984; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-177. Design and operating requirements.

1. Any landfill that is not covered by subsection 3 must have a liner system for all portions of the landfill (except for existing portions of such landfill). The liner system must have:

   a. A liner that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner must be:

      (1) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

      (2) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

      (3) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

   b. A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The department will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed one foot [.3048 meter]. The leachate collection and removal system must be:

      (1) Constructed of materials that are:

         (a) Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and

         (b) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and

      (2) Designed and operated to function without clogging through the scheduled closure of the landfill.

2. The owner or operator will be exempted from the requirements of subsection 1 if the department finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see section 33-24-05-50) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the department will consider:

a. The nature and quantity of the waste;

b. The proposed alternate design and operation;

c. The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the landfill and ground water or surface water; and

d. All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

3. The owner or operator of each new landfill unit on which construction commences after January 19, 1992, each lateral expansion of a landfill unit on which construction commences after July 29, 1992, and each replacement of an existing landfill unit that is to commence reuse after July 29, 1992, must install two or more liners and a leachate collection and removal system above and between such liners. "Construction commences" is as defined in section 33-24-01-04 under "existing facility".

a. Liner.

(1) The liner system must include:

(a) A top liner designed and constructed of materials (for example, a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and postclosure care period; and

(b) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (for example, a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and postclosure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least three feet [91.44 centimeters] of compacted soil material with a hydraulic conductivity of no more than $1x10^{-7}$ centimeters per second.

(2) The liners must comply with paragraphs 1, 2, and 3 of subdivision a of subsection 1.

b. The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and postclosure care period. The department will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed thirty centimeters [1 foot]. The leachate collection and removal system must comply with paragraphs 3 and 4 of subdivision c.

c. The leachate collection and removal system between the liners, and immediately above the bottom composite liners in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and postclosure care period. The requirements for a leak detection system in this subdivision are satisfied by installation of a system that is, at a minimum:

(1) Constructed with a bottom slope of one percent or more;

(2) Constructed of granular drainage materials with a hydraulic conductivity of $1x10^{-2}$ centimeters per second or more and a thickness of twelve inches [30.5 centimeters] or more; or constructed of synthetic or geonet drainage materials with a transmissivity of $3x10^{-5}$ square meters per second or more;

(3) Constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the landfill;

(4) Designed and operated to minimize clogging during the active life and postclosure care period; and

(5) Constructed with sumps and liquid removal methods (for example, pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump or sumps. The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

d. The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

e. The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

4. The department may approve alternative design or operating practices to those specified in subsection 3 if the owner or operator demonstrates to the department that such design and operating practices, together with location characteristics:

a. Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in subsection 3; and

b. Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

5. The double-liner requirements set forth in subsection 3 may be waived by the department for any monofill, if:

a. The monofill contains only hazardous waste from foundry furnace emission controls or metal casting molding sand and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the toxicity characteristics in section 33-24-02-14 with hazardous waste numbers D004 through D017; and

b. Monofill liner.

(1) Evidence of leaking.

(a) The monofill has at least one liner for which there is no evidence that such liner is leaking;

(b) The monofill is located more than one-quarter mile from an "underground source of drinking water" (as that term is defined in 40 CFR section 270.2); and

(c) The monofill is in compliance with generally acceptable ground water monitoring requirements for facilities with hazardous waste permits; or

(2) The owner or operator demonstrates that the monofill is located, designed, and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

6. The owner or operator of any replacement landfill unit is exempt from subsection 3 if:

   a. The existing unit was constructed in compliance with the design standards of this article; and

   b. There is no reason to believe that the liner is not functioning as designed.

7. The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a twenty-five-year storm.

8. The owner or operator shall design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a twenty-four-hour, twenty-five-year storm.

9. Collection and holding facilities (for example, tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of this system.

10. If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the landfill to control wind dispersal.

11. The department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-178. Monitoring and inspection.

1. During construction or installation, the liners (except in the case of existing portions of landfills exempt from subsection 1 of section 33-24-05-177) and cover systems (for example, membranes, sheets or coatings) must be inspected for uniformity, damage, and imperfections (for example, holes, cracks, thin spots, or foreign materials) immediately after construction or installation:

   a. Synthetic liners and covers must be inspected by a qualified professional (for example, a registered professional engineer) to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

   b. Soil based and admixed liners and covers must be inspected by a qualified professional (for example, a registered professional engineer) for imperfections, including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.

2. While a landfill is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

   a. Deterioration, malfunctions, or improper operation of run-on and runoff control systems;

b. Proper functioning of wind dispersal control systems, where present; and

c. The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

3. Leak detection system.

a. An owner or operator required to have a leak detection system under subsection 3 or 4 of section 33-24-05-177 must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

b. After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semiannually. If at any time during the postclosure care period the pump operating level is exceeded at units on quarterly or semiannual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

c. "Pump operating level" is a liquid level proposed by the owner or operator and approved by the department based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; January 1, 1994; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-179. Surveying and recordkeeping.

The owner or operator of a landfill shall maintain the following items in the operating records required under section 33-24-05-40:

1. On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed bench marks; and

2. The contents of each cell and the approximate location of each hazardous waste type within each cell.

History: Effective January 1, 1984; amended effective December 1, 1988.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-180. Closure and postclosure care.

1. At final closure of the landfill or upon closure of any cell, the owner or operator shall cover the landfill or cell with a final cover designed and constructed to:

a. Provide long-term minimization of migration of liquids through the closed landfill;

b. Function with minimum maintenance;

c. Promote drainage and minimize erosion or abrasion of the cover;

d. Accommodate settling and subsidence so that the cover's integrity is maintained; and

e. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

2. After final closure, the owner or operator shall comply with all postclosure requirements contained in sections 33-24-05-66 through 33-24-05-69, including maintenance and monitoring throughout the postclosure care period (specified in the permit under section 33-24-05-66). The owner or operator shall:

   a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

   b. Continue to operate the leachate collection and removal system until leachate is no longer detected;

   c. Maintain and monitor the leak detection system in accordance with paragraph 4 of subdivision c of subsection 3 of section 33-24-05-177, subdivision d of subsection 3 of section 33-24-05-177, and subsection 3 of section 33-24-05-178, and comply with all other applicable leak detection system requirements of sections 33-24-05-176 through 33-24-05-190;

   d. Maintain and monitor the ground water monitoring system and comply with all other applicable requirements of sections 33-24-05-47 through 33-24-05-58;

   e. Prevent run-on and runoff from eroding or otherwise damaging the final cover; and

   f. Protect and maintain surveyed bench marks used in complying with section 33-24-05-179.

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; January 1, 1994; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-181. Special requirements for ignitable or reactive waste.

1. Except as provided in subsection 2 and in section 33-24-05-185, ignitable or reactive waste may not be placed in a landfill, unless the waste and landfill meet all applicable requirements of sections 33-24-05-250 through 33-24-05-299, and:

   a. The resulting waste mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under section 33-24-02-11 or 33-24-02-13; and

   b. Subsection 2 of section 33-24-05-08 is complied with.

2. Except for prohibited wastes which remain subject to treatment standards in sections 33-24-05-280 through 33-24-05-289, ignitable wastes in containers may be landfilled without meeting the requirements of subsection 1, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and may not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

History: Effective January 1, 1984; amended effective December 1, 1991.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-182. Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials (see appendix III for examples of incompatible wastes and materials), may not be placed in the same landfill cell, unless subsection 2 of section 33-24-05-08 is complied with.

History: Effective January 1, 1984; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-183. Special requirements for bulk and containerized liquids.

1. The placement of bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

2. To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: method 9095B (paint filter liquids test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05.

3. Containers holding free liquids must not be placed in a landfill unless:

   a. All free-standing liquid:

      (1) Has been removed by decanting, or other methods;

      (2) Has been mixed with sorbent or solidified so that freestanding liquid is no longer observed; or

      (3) Has been otherwise eliminated;

   b. The container is very small, such as an ampule;

   c. The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

   d. The container is a lab pack as defined in section 33-24-05-185 and is disposed of in accordance with section 33-24-05-185.

4. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in subdivision a; materials that pass one of the tests in subdivision b; or materials that are determined by the department to be nonbiodegradable through the chapter 33-24-01 petition process.

   a. Nonbiodegradable sorbents.

      (1) Inorganic minerals, other inorganic materials, and elemental carbon (for example, aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon);

      (2) High molecular weight synthetic polymers (for example, polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate,

polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(3) Mixtures of these nonbiodegradable materials.

b. Test for nonbiodegradable sorbents.

(1) The sorbent material is determined to be nonbiodegradable under ASTM method G21-70 (1984a)-Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi;

(2) The sorbent material is determined to be nonbiodegradable under ASTM method G22-76 (1984b)-Standard Practice for Determining Resistance of Plastics to Bacteria; or

(3) The sorbent material is determined to be nonbiodegradable under Organization for Economic Cooperation and Development test 301B: [CO_2 Evolution (Modified Sturm Test)].

5. The placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the department, or the department determines that:

a. The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under interim status, which contains, or may reasonably be anticipated to contain, hazardous waste; and

b. Placement in such owner or operator's landfill will not present a risk of contamination of any "underground source of drinking water" (as that term is defined in 40 CFR section 270.2).

History: Effective January 1, 1984; amended effective October 1, 1986; December 1, 1988; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-184. Special requirements for containers.

Unless they are very small, such as an ampule, containers must be either:

1. At least ninety percent full when placed in the landfill; or

2. Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

History: Effective January 1, 1984.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-185. Disposal of small containers of hazardous waste in overpacked drums (lab packs).

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

1. Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the department of transportation hazardous materials regulations [49 CFR, parts 173, 178, and 179], if those regulations specify particular inside container for the waste.

2. The inside containers must be overpacked in an open head department of transportation specification metal shipping container [49 CFR, parts 178 and 179] of no more than four hundred sixteen-liter [110-gallon] capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with subsection 4 of section 33-24-05-183, to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.

3. The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with subsection 2 of section 33-24-05-08.

4. Incompatible wastes, as defined in section 33-24-01-04, may not be placed in this same outside container.

5. Reactive wastes, other than cyanide-bearing or sulfide-bearing waste, as defined in subdivision e of subsection 1 of section 33-24-02-13, must be treated or rendered nonreactive prior to packaging in accordance with subsections 1 through 4. Cyanide-bearing and sulfide-bearing reactive waste may be packed in accordance with subsections 1 through 4 without first being treated or rendered nonreactive.

6. Such disposal is in compliance with the requirements of sections 33-24-05-250 through 33-24-05-299. Persons who incinerate lab packs according to the requirements in subdivision a of subsection 3 of section 33-24-05-282 may use fiber drums in place of metal outer containers. Such fiber drums must meet the department of transportation specifications in 49 CFR 173.12 and be overpacked according to the requirements in subsection 2.

History: Effective January 1, 1984; amended effective December 1, 1988; December 1, 1991; January 1, 1994; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-186. Special requirements for hazardous wastes F020, F021, F022, F023, F026, and F027.

1. Hazardous wastes F020, F021, F022, F023, F026, and F027 may not be placed in a landfill unless the owner or operator operates the landfill in accordance with a management plan for these wastes that is approved by the department pursuant to the standards set out in this subsection and in accord with all other applicable requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819. The factors to be considered are:

   a. The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through the soil or to volatilize or escape into the atmosphere;

   b. The attenuative properties of underlying and surrounding soils or other materials;

   c. The mobilizing properties of other materials codisposed with these wastes; and

   d. The effectiveness of additional treatment, design, or monitoring requirements.

2. The department may determine that additional design, operating, and monitoring requirements are necessary for landfills managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

History: Effective October 1, 1986; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-187. Action leakage rate.

1. The department shall approve an action leakage rate for landfill units subject to subsection 3 or 4 of section 33-24-05-177. The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot [.3048 meters]. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (for example, slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system, and proposed response actions (for example, the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

2. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under subsection 3 of section 33-24-05-178, to an average daily flow rate (gallons per acre per day) for each sump. Unless the department approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the postclosure care period when monthly monitoring is required under subsection 3 of section 33-24-05-178.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-188. Response actions.

1. The owner or operator of landfill units subject to subsection 3 or 4 of section 33-24-05-177 must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in subsection 2.

2. If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

   a. Notify the department in writing of the exceedance within seven days of the determination;

   b. Submit a preliminary written assessment to the department within fourteen days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

   c. Determine to the extent practicable the location, size, and cause of any leak;

   d. Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

e. Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and

f. Within thirty days after the notification that the action leakage rate has been exceeded, submit to the department the results of the analyses specified in subdivisions c, d, and e, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the department a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak or remediation determinations, or both, in subdivisions c, d, and e of subsection 2, the owner or operator must:

a. Assess and conduct the following:

(1) Assess the source of liquids and amounts of liquids by source;

(2) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquids; and

(3) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

b. Document why such assessments are not needed.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-189. [Reserved]

33-24-05-190. [Reserved]

33-24-05-191. [Reserved]

33-24-05-192. [Reserved]

33-24-05-193. [Reserved]

33-24-05-194. [Reserved]

33-24-05-195. [Reserved]

33-24-05-196. [Reserved]

33-24-05-197. [Reserved]

33-24-05-198. [Reserved]

33-24-05-199. [Reserved]

33-24-05-200. [Reserved]

33-24-05-201. Applicability to recyclable materials used in a manner constituting disposal.

1. Sections 33-24-05-201 through 33-24-05-209 apply to recyclable materials that are applied to or placed on the land:

   a. Without mixing with any other substances; or

   b. After mixing or combination with any other substances. These materials will be referred to throughout sections 33-24-05-201 through 33-24-05-209 as "materials used in a manner that constitutes disposal".

2. Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the products so as to become inseparable by physical means and if such products meet the applicable treatment standards in sections 33-24-05-280 through 33-24-05-289 (or applicable prohibition levels in section 33-24-05-272 or Resource Conservation and Recovery Act section 3004(d), where no treatment standards have been established) for each recyclable material (for example, hazardous waste) that they contain, and the recycler complies with subdivision f of subsection 2 of section 33-24-05-256.

3. Antiskid or deicing uses of slags, which are generated from high temperature metals recovery processing of hazardous waste K061, K062, and F006, in a manner constituting disposal are not covered by the exemption in subsection 2 and remain subject to regulation.

4. Fertilizers that contain recyclable materials are not subject to regulation provided that:

   a. They are zinc fertilizers excluded from the definition of solid waste according to subdivision u of subsection 1 of section 33-24-02-04; or

   b. They meet the applicable treatment standards in sections 33-24-05-280 through 33-24-05-289 for each hazardous waste that they contain.

History: Effective October 1, 1986; amended effective December 1, 1988; December 1, 1991; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-202. Standards applicable to generators and transporters of materials used in a manner that constitutes disposal.

Generators and transporters of materials that are used in a manner that constitutes disposal are subject to the applicable requirements of chapters 33-24-03 through 33-24-04 and the notification requirements.

History: Effective October 1, 1986.
General Authority: NDCC 23-20.2-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-203. Standards applicable to storers of materials that are to be used in a manner that constitutes disposal who are not the ultimate users.

Owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the material, are regulated under all applicable provisions of sections 33-24-05-01 through 33-24-05-143, sections 33-24-05-950 through 33-24-05-1149, and chapters 33-24-06 and 33-24-07 and the notification requirements.

History: Effective October 1, 1986; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-204. Standards applicable to users of materials that are used in a manner that constitutes disposal.

1. Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are regulated under all applicable provisions of sections 33-24-05-01 through 33-24-05-143, sections 33-24-05-160 through 33-24-05-190, sections 33-24-05-250 through 33-24-05-299, and chapters 33-24-06 and 33-24-07 and the notification requirements. (These requirements do not apply to products which contain these recyclable materials under the provisions of subsection 2 of section 33-24-05-201.)

2. The use of waste oil or used oil or other material, which is contaminated with dioxin or any other hazardous waste (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment is prohibited.

History: Effective October 1, 1986; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-205. [Reserved]

33-24-05-206. [Reserved]

33-24-05-207. [Reserved]

33-24-05-208. [Reserved]

33-24-05-209. [Reserved]

33-24-05-210. Applicability to hazardous waste burned for energy recovery.

Repealed effective January 1, 1994.

33-24-05-211. Prohibitions.

Repealed effective January 1, 1994.

33-24-05-212. Standards applicable to generators of hazardous waste fuel.

Repealed effective January 1, 1994.

33-24-05-213. Standards applicable to transporters of hazardous waste fuel.

Repealed effective January 1, 1994.

33-24-05-214. Standards applicable to marketers of hazardous waste fuel.

Repealed effective January 1, 1994.

33-24-05-215. Standards applicable to burners of hazardous waste fuel.

Repealed effective January 1, 1994.

33-24-05-216. [Reserved]

33-24-05-217. [Reserved]

33-24-05-218. [Reserved]

33-24-05-219. [Reserved]

33-24-05-220. Applicability to used oil burned for energy recovery.

Repealed effective January 1, 1994.

33-24-05-221. Prohibitions.

Repealed effective January 1, 1994.

33-24-05-222. Standards applicable to generators of used oil burned for energy recovery.

Repealed effective January 1, 1994.

33-24-05-223. Standards applicable to marketers of used oil burned for energy recovery.

Repealed effective January 1, 1994.

33-24-05-224. Standards applicable to burners of used oil burned for energy recovery.

Repealed effective January 1, 1994.

33-24-05-225. [Reserved]

33-24-05-226. [Reserved]

33-24-05-227. [Reserved]

33-24-05-228. [Reserved]

33-24-05-229. [Reserved]

33-24-05-230. Applicability and requirements for recyclable materials utilized for precious metal recovery.

1. Sections 33-24-05-230 through 33-24-05-234 apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these.

2. Persons who generate, transport, or store recyclable materials that are regulated under sections 33-24-05-230 through 33-24-05-234 are subject to the following requirements:

   a. Notification requirements;

   b. Sections 33-24-03-04 through 33-24-03-07 (for generators), sections 33-24-04-04 and 33-24-04-05 (for transporters), and sections 33-24-05-38 and 33-24-05-39 (for persons who store); and

   c. For precious metals exported to or imported from designated organization for economic cooperation and development member countries for recovery, sections 33-24-03-50 through 33-24-03-59 and subsection 1 of section 33-24-05-02. For precious metals exported to or imported from non-organization for economic cooperation and development countries for recovery, sections 33-24-03-17 through 33-24-03-25 and section 33-24-03-30.

3. Persons who store recycled materials that are regulated under sections 33-24-05-230 through 33-24-05-234 must keep the following records to document that they are not accumulating these materials speculatively (as defined in subsection 3 of section 33-24-02-01):

   a. Records showing the volume of these materials stored at the beginning of the calendar year;

   b. The amount of these materials generated or received during the calendar year; and

   c. The amount of materials remaining at the end of the calendar year.

4. Recyclable materials that are regulated under sections 33-24-05-230 through 33-24-05-234 that are accumulated speculatively (as defined in subsection 3 of section 33-24-02-01) are subject to all applicable provisions of chapters 33-24-03 through 33-24-07.

History: Effective October 1, 1986; amended effective December 1, 1988; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-231. [Reserved]

33-24-05-232. [Reserved]

33-24-05-233. [Reserved]

33-24-05-234. [Reserved]

33-24-05-235. Applicability and requirements of spent lead acid batteries being reclaimed.

1. For a facility that generates, collects, transports, stores, or regenerates lead-acid batteries for reclamation purposes, the facility may be exempt from certain hazardous waste management requirements. Use the following table to determine which requirements apply. Alternatively, a generator may choose to manage spent lead-acid batteries under the universal waste rules in sections 33-24-05-700 through 33-24-05-799.

If the batteries:	And if you:	Then you:	And you:
(1) Will be reclaimed through regeneration (such as by electrolyte replacement).		Are exempt from chapters 33-24-03 (except for section 33-24-03-02), 33-24-04, 33-24-06, and 33-24-07 and sections 33-24-05-01 through 33-24-05-599 and 33-24-05-800 through 33-24-05-929, and the notification requirements of section 33-24-03-03.	Are subject to chapter 33-24-02 and section 33-24-03-02.
(2) Will be reclaimed other than through regeneration.	Generate, collect, or transport, or any combination of the above, these batteries.	Are exempt from chapters 33-24-03 (except for section 33-24-03-02), 33-24-04, 33-24-06, and 33-24-07 and sections 33-24-05-01 through 33-24-05-249, 33-24-05-300 through 33-24-05-599, and 33-24-05-800 through 33-24-05-929, and the notification requirements of section 33-24-03-03.	Are subject to chapter 33-24-02 and section 33-24-03-02, and the applicable provisions of sections 33-24-05-250 through 33-24-05-299.
(3) Will be reclaimed other than through regeneration.	Store these batteries but are not the reclaimer.	Are exempt from chapters 33-24-03 (except for section 33-24-03-02), 33-24-04, 33-24-06, and 33-24-07 and sections 33-24-05-01 through 33-24-05-249, 33-24-05-300 through 33-24-05-599, and 33-24-05-800 through 33-24-05-929, and	Are subject to chapter 33-24-02 and section 33-24-03-02, and the applicable provisions of sections 33-24-05-250 through 33-24-05-299.

		the notification requirements of section 33-24-03-03.	
(4) Will be reclaimed other than through regeneration.	Store these batteries before you reclaim them.	Must comply with subsection 2 of section 33-24-05-235 and as appropriate other regulatory provisions in subsection 2 of section 33-24-06-235.	Are subject to chapter 33-24-02 and section 33-24-03-02, and the applicable provisions of sections 33-24-05-250 through 33-24-05-299.
(5) Will be reclaimed other than through regeneration.	Do not store these batteries before you reclaim them.	Are exempt from chapters 33-24-03 (except for section 33-24-03-02), 33-24-04, 33-24-06, and 33-24-07 and sections 33-24-05-01 through 33-24-05-249, 33-24-05-300 through 33-24-05-599, and 33-24-05-800 through 33-24-05-929, and the notification requirements of section 33-24-03-03.	Are subject to chapter 33-24-02 and section 33-24-03-02, and the applicable provisions of sections 33-24-05-250 through 33-24-05-299.
(6) Will be reclaimed through regeneration or any other means.	Export these batteries for reclamation in a foreign country.	Are exempt from chapters 33-24-03 (except for section 33-24-03-02), 33-24-04, 33-24-06, and 33-24-07 and sections 33-24-05-01 through 33-24-05-559 and 33-24-05-800 through 33-24-05-929, and the notification requirements of section 33-24-03-03, and except for the applicable requirements in either: (1) Sections 33-24-03-50 through 33-24-03-59; or (2) Section 33-24-03-20 "Notification of Intent to Export", subdivisions a	Are subject to chapter 33-24-02 and section 33-24-03-02, and either must comply with sections 33-24-03-50 through 33-24-03-59 (if shipping to one of the organization for economic cooperation and development countries specified in subdivision a of subsection 1 of section 33-24-03-25, or must: (a) Comply with the requirements applicable to a primary exporter in section 33-24-03-20, subdivisions a through d and f of subsection 1 and subsection 2 of section 33-24-03-23

		through d and f of subsection 1 and subsection 2 of section 33-24-03-23 "Annual Reports", and section 33-24-03-24 "Recordkeeping."	and section 33-24-03-24; (b) Export these batteries only upon consent of the receiving country and in conformance with the environmental protection agency acknowledgment of consent as defined in sections 33-24-03-17 through 33-24-03-25; and (c) Provide a copy of the environmental protection agency acknowledgment of consent for the shipment to the transporter transporting the shipment for export.
(7) Will be reclaimed through regeneration or any other means.	Transport these batteries in the United States to export them for reclamation in a foreign country.	Are exempt from chapters 33-24-04, 33-24-06, and 33-24-07 and sections 33-24-05-01 through 33-24-05-559 and 33-24-05-800 through 33-24-05-929, and the notification requirements of section 33-24-03-03.	Must comply with applicable requirements in sections 33-24-03-50 through 33-24-03-59 (if shipping to one of the organization for economic cooperation and development countries specified in subdivision a of subsection 1 of section 33-24-03-25, or must comply with the following: (a) May not accept a shipment if the shipment does not conform to the environmental protection agency acknowledgment of consent; (b) Must ensure that a copy of the environmental protection agency acknowledgment of consent accompanies the shipment; and (c) Must ensure that the shipment is delivered

to the facility designated by the person initiating the shipment.

2. For a facility that stores spent lead-acid batteries before reclamation but not through regeneration, the facility is subject to the following requirements:

   a. Notification under section 33-24-03-03.

   b. All applicable provisions in sections 33-24-05-01 through 33-24-05-143, and sections 33-24-05-950 through 33-24-05-1149, except sections 33-24-05-04, 33-24-05-38, and 33-24-05-39.

   c. All applicable regulations in chapters 33-24-06 and 33-24-07.

History: Effective October 1, 1986; amended effective December 1, 1988; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-236. [Reserved]

33-24-05-237. [Reserved]

33-24-05-238. [Reserved]

33-24-05-239. [Reserved]

33-24-05-240. [Reserved]

33-24-05-241. [Reserved]

33-24-05-242. [Reserved]

33-24-05-243. [Reserved]

33-24-05-244. [Reserved]

33-24-05-245. [Reserved]

33-24-05-246. [Reserved]

33-24-05-247. [Reserved]

33-24-05-248. [Reserved]

33-24-05-249. [Reserved]

33-24-05-250. Purpose, scope, and applicability to land disposal restrictions.

1. Sections 33-24-05-250 through 33-24-05-299 identify hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.

2. Except as specifically provided otherwise in sections 33-24-05-250 through 33-24-05-299 or chapter 33-24-02, the requirements of sections 33-24-05-250 through 33-24-05-299 apply to persons who generate or transport hazardous waste and owners and operators of hazardous waste treatment, storage, and disposal facilities.

3. Restricted wastes may continue to be land disposed as follows:

   a. Where persons have been granted an extension from the effective date of a prohibition under sections 33-24-05-266 through 33-24-05-279 or pursuant to section 33-24-05-254, with respect to those wastes covered by the extension;

   b. Where persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under sections 33-24-05-250 through 33-24-05-299, or 40 CFR part 148, are not prohibited if the wastes:

      (1) Are disposed into a nonhazardous or hazardous injection well as defined in 40 CFR 144.6(a); and

      (2) Do not exhibit any prohibited characteristic of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14 at the point of injection; or

   d. Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under sections 33-24-05-250 through 33-24-05-299, are not prohibited if the wastes meet any of the following criteria, unless the wastes are subject to a specified method of treatment other than DEACT in section 33-24-05-280, or are D003 reactive cyanide:

      (1) The wastes are managed in a treatment system which subsequently discharges to waters of the United States pursuant to a permit issued under section 402 of the Clean Water Act;

      (2) The wastes are treated for purposes of the pretreatment requirements of section 307 of the Clean Water Act; or

      (3) The wastes are managed in a zero discharge system engaged in Clean Water Act-equivalent treatment as defined in subsection 1 of section 33-24-05-277; and

      (4) The wastes no longer exhibit a prohibited characteristic at the point of land disposal (for example, placement in a surface impoundment).

4. The requirements of sections 33-24-05-250 through 33-24-05-299 do not affect the availability of a waiver under section 121(d)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

5. The following hazardous wastes are not subject to any provision of sections 33-24-05-250 through 33-24-05-299:

   a. Waste generated by small quantity generators of less than one hundred kilograms of nonacute hazardous waste or less than one kilogram of acute hazardous waste per month, as defined in section 33-24-02-05.

   b. Waste pesticides that a farmer disposes of pursuant to section 33-24-03-40.

   c. Wastes identified or listed as hazardous after November 8, 1984, for which the department has not promulgated land disposal prohibitions or treatment standards.

   d. De minimis losses of characteristic wastes to wastewaters are not considered to be prohibited wastes and are defined as losses from normal material handling operations (for example, spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks, or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; rinsate from empty containers or from containers that are rendered empty by that rinsing; and laboratory wastes not exceeding one percent of the total flow of wastewater into the facility's headworks on an annual basis, or with a combined annualized average concentration not exceeding one part per million in the headworks of the facility's wastewater treatment or pretreatment facility.

6. Universal waste handlers and universal waste transporters, as defined in section 33-24-01-04, are exempt from sections 33-24-05-256 and 33-24-05-290 for the wastes listed below. These handlers are subject to regulation under sections 33-24-05-700 through 33-24-05-799.

   a. Batteries as described in section 33-24-05-702;

   b. Pesticides as described in section 33-24-05-703;

   c. Mercury containing equipment as described in section 33-24-05-704; and

   d. Lamps as described in section 33-24-05-705.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-251. Definitions applicable to sections 33-24-05-250 through 33-24-05-299.

When used in sections 33-24-05-250 through 33-24-05-299, the following terms have the meanings given below:

1. "Debris" means solid material exceeding a sixty millimeter particle size that is intended for disposal and that is a manufactured object; or plant or animal matter; or natural geologic material. However, the following materials are not debris: any material for which a specific treatment standard is provided in sections 33-24-05-280 through 33-24-05-289, namely lead-acid batteries, cadmium batteries, and radioactive lead solids; process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and intact containers of hazardous waste that are not ruptured and that retain at least seventy-five percent of their original volume. A mixture of debris that has not been treated to the standards provided by section 33-24-05-285 and other material is subject to

regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.

2. "Halogenated organic compounds or HOCs" mean those compounds having a carbon-halogen bond.

3. "Hazardous constituent or constituents" means those constituents listed in appendix V to chapter 33-24-02.

4. "Hazardous debris" means debris that contains a hazardous waste listed in sections 33-24-02-15 through 33-24-02-19, or that exhibits a characteristic of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14. Any deliberate mixing of prohibited hazardous waste with debris that changes its treatment classification (for example, from waste to hazardous debris) is not allowed under the dilution prohibition in section 33-24-05-252.

5. "Inorganic metal-bearing waste" is a waste for which the environmental protection agency has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content as described in subdivision a of subsection 3 of section 33-24-05-252, and is specifically listed in appendix XXIX of chapter 33-24-05.

6. "Land disposal" means placement in or on the land, except in a corrective action management unit or staging pile, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.

7. "Nonwastewaters" are wastes that do not meet the criteria for wastewaters in subsection 11.

8. "Polychlorinated biphenyls or PCBs" are halogenated organic compounds defined in accordance with 40 CFR 761.3.

9. "Soil" means unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the United States Natural Resources Conservation Service, or a mixture of such materials with liquids, sludges, or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil by volume based on visual inspection. Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (for example, from waste to contaminated soil) is not allowed under the dilution prohibition in section 33-24-05-252.

10. "Underlying hazardous constituent" means any constituent listed in section 33-24-05-288, table universal treatment standards, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific universal treatment standards treatment standard.

11. "Wastewaters" are wastes that contain less than one percent by weight total organic carbon (TOC) and less than one percent by weight total suspended solids.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-252. Dilution prohibited as a substitute for treatment.

1. Except as provided in subsection 2, no generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with sections 33-24-05-280 through 33-24-05-289, to circumvent the effective date of a prohibition in sections 33-24-05-266 through 33-24-05-279, to otherwise avoid a prohibition in sections 33-24-05-266 through 33-24-05-279, or to circumvent a land disposal prohibition imposed by Resource Conservation and Recovery Act section 3004.

2. Dilution of wastes that are hazardous only because they exhibit a characteristic in treatment systems which include land-based units which treat wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act, or which treat wastes in a Clean Water Act-equivalent treatment system, or which treat wastes for the purposes of pretreatment requirements under section 307 of the Clean Water Act is not impermissible dilution for purposes of this section unless a method other than DEACT has been specified in section 33-24-05-280 as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

3. Combustion of the hazardous waste codes listed in appendix XXIX is prohibited, unless the waste, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, can be demonstrated to comply with one or more of the following criteria, unless otherwise specifically prohibited from combustion:

    a. The waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard specified in section 33-24-05-288;

    b. The waste consists of organic, debris-like materials (for example, wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste;

    c. The waste, at point of generation, has reasonable heating value such as greater than or equal to five thousand British thermal units per pound;

    d. The waste is cogenerated with wastes for which combustion is a required method of treatment;

    e. The waste is subject to requirements necessitating reduction of organics, including biological agents; or

    f. The waste contains greater than one percent total organic carbon (TOC).

4. It is a form of impermissible dilution, and therefore prohibited, to add iron filings or other metallic forms of iron to lead-containing hazardous wastes in order to achieve any land disposal restriction treatment standard for lead. Lead-containing wastes include D008 wastes (wastes exhibiting a characteristic due to the presence of lead), all characteristic wastes containing lead as an underlying hazardous constituent, listed wastes containing lead as a regulated constituent, and hazardous media containing any of the aforementioned lead-containing wastes.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-253. Treatment surface impoundment exemption.

1. Wastes which are otherwise prohibited from land disposal under sections 33-24-05-250 through 33-24-05-299 may be treated in a surface impoundment or series of impoundments provided that:

   a. Treatment of such wastes occurs in the impoundments.

   b. The following conditions are met:

      (1) Sampling and testing. For wastes with treatment standards in sections 33-24-05-280 through 33-24-05-289 and prohibition levels in sections 33-24-05-266 through 33-24-05-279, or both, or Resource Conservation and Recovery Act section 3004(d), the residues from treatment are analyzed, as specified in section 33-24-05-256 or 33-24-05-272, to determine if the wastes meet the applicable treatment standards or where no treatment standards have been established for the waste, the applicable prohibition levels. The sampling method, specified in the waste analysis plan under section 33-24-05-04, must be designed such that representative samples of the sludge and the supernatant are tested separately rather than mixed to form homogeneous samples.

      (2) Removal. The following treatment residues (including any liquid waste) must be removed at least annually; residues which do not meet the treatment standards promulgated under sections 33-24-05-280 through 33-24-05-289; residues which do not meet the prohibition levels established under sections 33-24-05-266 through 33-24-05-279 or imposed by statute (where no treatment standards have been established); residues which are from the treatment of wastes prohibited from land disposal under sections 33-24-05-266 through 33-24-05-279 (where no treatment standards have been established and no prohibition levels apply); or residues from managing listed wastes which are not delisted under section 33-24-01-08. If the volume of liquid flowing through the impoundment or series of impoundments annually is greater than the volume of the impoundment or impoundments, this flowthrough constitutes removal of the supernatant for the purpose of this requirement.

      (3) Subsequent management. Treatment residues may not be placed in any other surface impoundment for subsequent management.

      (4) Recordkeeping. Sampling and testing and recordkeeping provisions of section 33-24-05-04 apply.

   c. The impoundment meets the design requirements of subsection 3 of section 33-24-05-119, regardless that the unit may not be new, expanded, or a replacement, and be in compliance with applicable ground water monitoring requirements of sections 33-24-05-47 through 33-24-05-58 unless:

      (1) Exempted pursuant to subsection 4 or 5 of section 33-24-05-119;

      (2) Upon application by the owner or operator, the department, after notice and an opportunity to comment, has granted a waiver of the requirements on the basis that the surface impoundment:

         (a) Has at least one liner, for which there is no evidence that such liner is leaking;

         (b) Is located more than one-quarter mile [402.3 meters] from an underground source of drinking water; and

(c) Is in compliance with generally applicable ground water monitoring requirements for facilities with permits; or

(3) Upon application by the owner or operator, the department, after notice and an opportunity to comment, has granted a modification to the requirements on the basis of a demonstration that the surface impoundment is located, designed, and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

d. The owner or operator submits to the department a written certification that the requirements of subdivision c of subsection 1 have been met. The following certification is required:

I certify under penalty of law that the requirements of subdivision c of subsection 1 of section 33-24-05-253 have been met for all surface impoundments being used to treat restricted wastes. I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

2. Evaporation of hazardous constituents as the principal means of treatment is not considered to be treatment for purposes of an exemption under this section.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-254. Procedures for case-by-case extensions to an effective date.

1. Any person who generates, treats, stores, or disposes of a hazardous waste may submit an application to the administrator for an extension to the effective date of any applicable restriction established under sections 33-24-05-266 through 33-24-05-279. The applicant shall demonstrate the following:

a. The applicant has made a good-faith effort to locate and contract with treatment, recovery, or disposal facilities nationwide to manage the applicant's waste in accordance with the effective date of the applicable restrictions established under sections 33-24-05-266 through 33-24-05-279;

b. The applicant has entered into a binding contractual commitment to construct or otherwise provide alternative treatment, recovery, (for example, recycling), or disposal capacity that meets the treatment standards specified in sections 33-24-05-280 through 33-24-05-289 or, where treatment standards have not been specified, such treatment, recovery, or disposal capacity is protective of human health and the environment;

c. Due to circumstances beyond the applicant's control, such alternative capacity cannot reasonably be made available by the applicable effective date. This demonstration may include a showing that the technical and practical difficulties associated with providing the alternative capacity will result in the capacity not being available by the applicable effective date;

d. The capacity being constructed or otherwise provided by the applicant will be sufficient to manage the entire quantity of waste that is the subject of the application;

e. The applicant provides a detailed schedule for obtaining required operating and construction permits or an outline of how and when alternative capacity will be available;

f. The applicant has arranged for adequate capacity to manage the applicant's waste during an extension and has documented in the application the location of all sites at which the waste will be managed; and

g. Any waste managed in a surface impoundment or landfill during the extension period will meet the requirements of subdivision b of subsection 8.

2. An authorized representative signing an application described under subsection 1 shall make the following certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

3. After receiving an application for an extension, the administrator may request any additional information which the administrator deems as necessary to evaluate the application.

4. An extension will apply only to the waste generated at the individual facility covered by the application and will not apply to restricted waste from any other facility.

5. On the basis of the information referred to in subsection 1, after notice and opportunity for comment, and after consultation with appropriate state agencies in all affected states, the administrator may grant an extension of up to one year from the effective date. The administrator may renew this extension for up to one additional year upon the request of the applicant if the demonstration required in subsection 1 can still be made. In no event will an extension extend beyond twenty-four months from the applicable effective date specified in sections 33-24-05-266 through 33-24-05-279. The length of any extension authorized will be determined by the administrator based on the time required to construct or obtain the type of capacity needed by the applicant as described in the completion schedule discussed in subdivision e of subsection 1. The administrator will give public notice of the intent to approve or deny a petition and provide an opportunity for public comment. The final decision on a petition will be published in the federal register.

6. Any person granted an extension under this section shall immediately notify the administrator as soon as that person has knowledge of any change in the conditions certified to in the application.

7. Any person granted an extension under this section shall submit written progress reports at intervals designated by the administrator. Such reports must describe the overall progress made toward constructing or otherwise providing alternative treatment, recovery, or disposal capacity; must identify any event which may cause or has caused a delay in the development of the capacity; and must summarize the steps taken to mitigate the delay. The administrator can revoke an extension at any time if the applicant does not demonstrate a good-faith effort to meet the schedule for completion, if the environmental protection agency denies or revokes any required permit, if conditions certified in the application change, or for any violation of this article.

8. When the administrator establishes an extension to an effective date under this section, during the period for which such extension is in effect:

a. The storage restrictions under subsection 1 of section 33-24-05-290 do not apply; and

b. Such hazardous waste may be disposed in a landfill or surface impoundment only if such unit is in compliance with the technical requirements of the following provisions regardless of whether such unit is existing, new, or a replacement or lateral expansion.

(1) The landfill, if in interim status, is in compliance with the applicable requirements of subsection 5 of section 33-24-06-16;

(2) The landfill, if permitted, is in compliance with the requirements of sections 33-24-05-47 through 33-24-05-58 and subsections 3, 4, and 5 of section 33-24-05-177;

(3) The surface impoundment, if in interim status, is in compliance with the applicable requirements of subsection 5 of section 33-24-06-16, and Resource Conservation and Recovery Act section 3005(j)(1);

(4) The surface impoundment, if permitted, is in compliance with the requirements of sections 33-24-05-47 through 33-24-05-58 and subsections 3, 4, and 5 of section 33-24-05-119;

(5) The surface impoundment, if newly subject to Resource Conservation and Recovery Act section 3005(j)(1) due to the promulgation of additional listings or characteristics for the identification of hazardous waste, is in compliance with the requirements of subsection 5 of section 33-24-06-16 (subpart F of 40 CFR part 265) within twelve months after the promulgation of additional listings or characteristics of hazardous waste, and with the requirements of subsection 5 of section 33-24-06-16 (40 CFR section 265.221 (a), (c), and (d)) within forty-eight months after the promulgation of additional listings or characteristics of hazardous waste. If a national capacity variance is granted, during the period the variance is in effect, the surface impoundment, if newly subject to Resource Conservation and Recovery Act section 3005(j)(1) due to the promulgation of additional listings or characteristics of hazardous waste, is in compliance with the requirements of subsection 5 of section 33-24-06-16 (subpart F of 40 CFR part 265) within twelve months after the promulgation of additional listings or characteristics of hazardous waste, and with the requirements of subsection 5 of section 33-24-06-16 (40 CFR section 265.221 (a), (c), and (d)) within forty-eight months after the promulgation of additional listings or characteristics of hazardous waste; or

(6) The landfill, if disposing of containerized liquid hazardous wastes containing polychlorinated biphenyls of concentrations greater than or equal to fifty parts per million but less than five hundred parts per million, is also in compliance with the requirements of 40 CFR 761.75 and this article.

9. Pending a decision on an application, the applicant is required to comply with all restrictions on land disposal under sections 33-24-05-250 through33-24-05-299 once the effective date for the waste has been reached.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-255. Petitions to allow land disposal of a waste prohibited under sections 33-24-05-266 through 33-24-05-279.

1. Any person seeking an exemption from a prohibition under sections 33-24-05-266 through 33-24-05-279 for the disposal of a restricted hazardous waste in a particular unit or units shall submit a petition to the administrator demonstrating, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous. The demonstration must include the following components:

a. An identification of the specific waste and the specific unit for which the demonstration will be made;

b. A waste analysis to describe fully the chemical and physical characteristics of the subject waste;

c. A comprehensive characterization of the disposal unit site including an analysis of background air, soil, and water quality;

d. A monitoring plan that detects migration at the earliest practicable time; and

e. Sufficient information to assure the administrator that the owner or operator of a land disposal unit receiving restricted wastes will comply with other applicable federal, state, and local laws.

2. The demonstration referred to in subsection 1 must meet the following criteria:

a. All waste and environmental sampling, test, and analysis data must be accurate and reproducible to the extent that state of the art techniques allow;

b. All sampling, testing, and estimation techniques for chemical and physical properties of the waste and all environmental parameters must have been approved by the administrator;

c. Simulation models must be calibrated for the specific waste and site conditions, and verified for accuracy by comparison with actual measurements;

d. A quality assurance and quality control plan that addresses all aspects of the demonstration must be approved by the administrator; and

e. An analysis must be performed to identify and quantify any aspects of the demonstration that contribute significantly to uncertainty. This analysis must include an evaluation of the consequences of predictable future events, including, but not limited to, earthquakes, floods, severe storm events, droughts, or other natural phenomena.

3. Each petition referred to in subsection 1 must include the following:

a. A monitoring plan that describes the monitoring program installed at or around the unit to verify continued compliance with the conditions of the variance. This monitoring plan must provide information on the monitoring of the unit or the environment around the unit, or both. The following specific information must be included in the plan:

(1) The media monitored in the cases where monitoring of the environment around the unit is required;

(2) The type of monitoring conducted at the unit, in the cases where monitoring of the unit is required;

(3) The location of the monitoring station;

(4) The monitoring interval (frequency of monitoring at each station);

(5) The specific hazardous constituents to be monitored;

(6) The implementation schedule for the monitoring program;

(7) The equipment used at the monitoring station;

(8) The sampling and analytical techniques employed; and

(9) The data recording and reporting procedures.

b. Where applicable, the monitoring program described in subdivision a must be in place for a period of time specified by the administrator, as part of the administrator's approval of the petition, prior to receipt of prohibited waste at the unit.

c. The monitoring data collected according to the monitoring plan specified under subdivision a must be sent to the administrator according to a format and schedule specified and approved in the monitoring plan.

d. A copy of the monitoring data collected under the monitoring plan specified under subdivision a must be kept onsite at the facility in the operating record.

e. The monitoring program specified under subdivision a meets the following criteria:

(1) All sampling, testing, and analytical data must be approved by the administrator and must provide data that is accurate and reproducible.

(2) All estimation and monitoring techniques must be approved by the administrator.

(3) A quality assurance and quality control plan addressing all aspects of the monitoring program must be provided to and approved by the administrator.

4. Each petition must be submitted to the administrator.

5. After a petition has been approved, the owner or operator must report any changes in conditions at the unit or the environment around the unit, or both, that significantly depart from the conditions described in the variance and affect the potential for migration of hazardous constituents from the units as follows:

a. If the owner or operator plans to make changes to the unit design, construction, or operation, such a change must be proposed in writing and the owner or operator must submit a demonstration to the administrator at least thirty days prior to making the change. The administrator will determine whether the proposed change invalidates the terms of the petition and will determine the appropriate response. Any change must be approved by the administrator prior to being made.

b. If the owner or operator discovers that a condition at the site which was modeled or predicted in the petition does not occur as predicted, this change must be reported, in writing, to the administrator within ten days of discovering the change. The administrator will determine whether the reported change from the terms of the petition requires further action which may include termination of waste acceptance and revocation of the petition, petition modifications, or other responses.

6. If the owner or operator determines that there is migration of hazardous constituents from the unit, the owner or operator must:

a. Immediately suspend receipt of prohibited waste at the unit; and

b. Notify the administrator in writing, within ten days of the determination that a release has occurred.

c. Following receipt of the notification the administrator will determine, within sixty days of receiving notification, whether the owner or operator can continue to receive prohibited waste in the unit and whether the variance is to be revoked. The administrator shall also determine whether further examination of any migration is warranted under applicable provisions of chapter 33-24-05.

7. Each petition must include the following statement signed by the petitioner or an authorized representative: (I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.)

8. After receiving a petition, the administrator may request any additional information that reasonably may be required to evaluate the demonstration.

9. If approved, the petition will apply to land disposal of the specific restricted waste at the individual disposal unit described in the demonstration and will not apply to any other restricted waste at that disposal unit, or to that specific restricted waste at any other disposal unit.

10. The administrator will give public notice in the federal register of the intent to approve or deny a petition and provide an opportunity for public comment. The final decision on a petition will be published in the federal register.

11. The term of a petition granted under this section may be no longer than the term of the hazardous waste permit if the disposal unit is operating under a hazardous waste permit, or up to a maximum of five years from the date of approval provided under subsection 7 if the unit is operating under interim status. In either case, the term of the granted petition expires upon the termination or denial of a hazardous waste permit, or upon the termination of interim status or when the volume limit of waste to be land disposed during the term of petition is reached.

12. Prior to the administrator's decision, the applicant is required to comply with all restrictions on land disposal under sections 33-24-05-250 through 33-24-05-299 once the effective date for the waste has been reached.

13. The petition granted by the administrator does not relieve the petitioner of the petitioner's responsibility in the management of hazardous waste under chapters 33-24-01 through 33-24-07.

14. Liquid hazardous wastes containing polychlorinated biphenyls of concentrations greater than or equal to five hundred parts per million are not eligible for an exemption under this section.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-256. Testing, tracking, and recordkeeping requirements for generators, treaters, and disposal facilities.

1. Requirements for generators:

   a. A generator of hazardous waste must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in section 33-24-05-280, or section 33-24-05-285, or section 33-24-05-289. This determination can be made concurrently with the hazardous waste determination required in section 33-24-03-02, in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using test method 1311 in

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846, as referenced in section 33-24-01-05, depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste's extract. (Alternatively, the generator must send the waste to a hazardous waste permitted treatment facility, where the waste treatment facility must comply with the requirements of section 33-24-05-04 and subsection 2.) In addition, some hazardous wastes must be treated by particular treatment methods before they can be land disposed and some soils are contaminated by such hazardous wastes. These treatment standards are also found in section 33-24-05-280 and are described in detail in section 33-24-05-282, table 1. These wastes, and soils contaminated with such wastes, do not need to be tested (however, if they are in a waste mixture, other wastes with concentration level treatment standards would have to be tested). If a generator determines they are managing a waste or soil contaminated with a waste, that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of section 33-24-05-258 in addition to any applicable requirements in this section.

b. If the waste or contaminated soil does not meet the treatment standards, or if the generator chooses not to make the determination of whether the generator's waste must be treated, with the initial shipment of waste to each treatment or storage facility, the generator must send a one-time written notice to each treatment or storage facility receiving the waste and place a copy in the file. The notice must include the information in column "subdivision b" of the generator paperwork requirements table in subdivision d. (Alternatively, if the generator chooses not to make the determination of whether the waste must be treated, the notification must include the hazardous waste numbers and manifest number of the first shipment and must state "This hazardous waste may or may not be subject to the land disposal restrictions treatment standards. The treatment facility must make the determination".) No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the generator's file.

(1) For contaminated soil, the following certification statement should be included, signed by an authorized representative:

I certify under penalty of law that I personally have examined this contaminated soil and it [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by subsection 3 of section 33-24-05-289.

(2) [Reserved]

c. If the waste or contaminated soil meets the treatment standard at the original point of generation:

(1) With the initial shipment of waste to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each treatment, storage, or disposal facility receiving the waste and place a copy in the file. The notice must include the information indicated in column "subdivision c" of the generator paperwork requirements table in subdivision d of subsection 1 and the following certification statement, signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in sections 33-24-05-280 through 33-24-05-289. I believe that the information I submitted is true, accurate, and complete. I am aware that there are

significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

(2) For contaminated soil, with the initial shipment of wastes to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each facility receiving the waste and place a copy in the file. The notice must include the information in column "subdivision c" of the generator paperwork requirements table in subdivision d of subsection 1.

(3) If the waste changes, the generator must send a new notice and certification to the receiving facility and place a copy in its files. Generators of hazardous debris excluded from the definition of hazardous waste under subsection 5 of section 33-24-02-03 are not subject to these requirements.

d. For reporting, tracking, and recordkeeping when exceptions allow certain wastes or contaminated soil that do not meet the treatment standards to be land disposed: There are certain exemptions from the requirement that hazardous wastes or contaminated soil meet treatment standards before they can be land disposed. These include, but are not limited to case-by-case extensions under section 33-24-05-254, disposal in a no-migration unit under section 33-24-05-255, or a national capacity variance or case-by-case capacity variance under sections 33-24-05-266 through 33-24-05-279. If a generator's waste is so exempt, then with the initial shipment of waste, the generator must send a one-time written notice to each land disposal facility receiving the waste. The notice must include the information indicated in column "subdivision d" of the generator paperwork requirements table. If the waste changes, the generator must send a new notice to the receiving facility and place a copy in its files.

Generator Paperwork Requirements Table

Required Information*	Subdivision b	Subdivision c	Subdivision d	Subdivision i
1. Environmental protection agency hazardous waste numbers and manifest number of first shipment.	√	√	√	√
2. Statement: This waste is not prohibited from land disposal.			√	
3. The waste is subject to the land disposal restrictions. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the land disposal restriction notice.	√	√		
4. The notice must include the applicable wastewater/nonwastewater category (see subsections 7 and 11 of section 33-24-05-251) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide).	√	√		
5. Waste analysis data (when available).	√	√	√	
6. Date the waste is subject to the prohibition.			√	
7. For hazardous debris, when treating with the alternative treatment	√		√	

Generator Paperwork Requirements Table

Required Information*	Subdivision b	Subdivision c	Subdivision d	Subdivision i
technologies provided by section 33-24-05-285, the contaminants subject to treatment, as described in subsection 2 of section 33-24-05-285; and an indication that these contaminants are being treated to comply with section 33-24-05-285.				
8. For contaminated soil subject to land disposal restrictions as provided in subsection 1 of section 33-24-05-289, the constituents subject to treatment as described in subsection 4 of section 33-24-05-289, and the following statements: This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by subsection 3 of section 33-24-05-289 or the universal treatment standards.	√	√		
9. A certification is needed (see applicable section for exact wording).		√		√

*Note: Information requirements referenced in the above table can be found in the indicated subdivision of subsection 1.

e. If a generator is managing and treating prohibited waste, or contaminated soil in tanks, containers, or containment buildings regulated under section 33-24-03-12 to meet applicable land disposal restriction treatment standards found at section 33-24-05-280, the generator must develop and follow a written waste analysis plan which describes the procedures the generator will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of table 1, section 33-24-05-285, however, are not subject to these waste analysis requirements.) The plan must be kept onsite in the generator's records, and the following requirements must be met:

(1) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste or wastes being treated and contain all information necessary to treat the waste or wastes in accordance with the requirements of sections 33-24-05-250 through 33-24-05-299, including the selected testing frequency.

(2) Such plan must be kept in the facility's onsite files and made available to inspectors.

(3) Wastes shipped offsite pursuant to this subdivision must comply with the notification requirements of subdivision c.

f. If a generator determines that the waste, or contaminated soil, is restricted based solely on the generator's knowledge of the waste, all supporting data used to make this determination must be retained onsite in the generator's files. If a generator determines that the waste or contaminated soil is restricted based on testing this waste or an extract developed using the test method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846,

incorporated by reference in section 33-24-01-05, and all waste analysis data must be retained onsite in the generator's files.

g. If a generator determines that the generator is managing a prohibited waste that is excluded from the definition of hazardous or solid waste or is exempted from hazardous waste regulation under sections 33-24-02-02 through 33-24-02-06 subsequent to the point of generation (including deactivated characteristic hazardous wastes managed in wastewater treatment systems subject to the Clean Water Act, as specified at subdivision b of subsection 1 of section 33-24-02-04 or that are Clean Water Act-equivalent, or are managed in an underground injection well regulated by the Safe Drinking Water Act), the generator must place a one-time notice describing such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from hazardous waste regulation, and the disposition of the waste, in the facility's onsite files.

h. Generators must retain onsite a copy of all notices, certifications, waste analysis data, and other documentation produced pursuant to this section for at least three years from the date that the waste that is the subject of such documentation was last sent to onsite or offsite treatment, storage, or disposal. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the department. The requirements of this subsection apply to solid wastes even when the hazardous characteristic is removed prior to disposal, or when the waste is excluded from the definition of hazardous or solid waste under sections 33-24-02-02 through 33-24-02-06, or exempted from hazardous waste regulation, subsequent to the point of generation.

i. If a generator is managing a lab pack containing hazardous wastes and wishes to use the alternative treatment standard for lab packs found at subsection 3 of section 33-24-05-282:

(1) With the initial shipment of waste to a treatment facility, the generator must submit a notice that provides the information in column "subdivision i" in the generator paperwork requirements table of subdivision d, and the following certification. The certification, which must be signed by an authorized representative and must be placed in the generator's files, must say the following:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under appendix VIII to chapter 33-24-05 and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at subsection 3 of section 33-24-05-282. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

(2) No further notification is necessary until such time that the wastes in the lab pack change, or the receiving facility changes, in which case a new notice and certification must be sent and a copy placed in the generator's file.

(3) If the lab pack contains characteristic hazardous wastes (D001-D043), underlying hazardous constituents (as defined in subsection 10 of section 33-24-05-251) need not be determined.

(4) The generator must also comply with the requirements in subdivisions f and g.

j. Small quantity generators with tolling agreements pursuant to subsection 5 of section 33-24-03-04 must comply with the applicable notification and certification requirements of

subsection 1 for the initial shipment of the waste subject to the agreement. Such generators must retain onsite a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the department.

2. Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans as required by section 33-24-05-04 for permitted facilities or the applicable requirements of subsection 5 of section 33-24-06-16 for interim status facilities. Such testing must be performed as provided in subdivisions a, b, and c.

   a. For wastes or contaminated soil with treatment standards expressed in the waste extract (toxicity characteristic leaching procedure), the owner or operator of the treatment facility must test an extract of the treatment residues, using test method 1311 (the toxicity characteristic leaching procedure, described in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05) to assure that the treatment residues extract meet the applicable treatment standards.

   b. For wastes or contaminated soil with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to assure that they meet the applicable treatment standards.

   c. A one-time notice must be sent with the initial shipment of waste or contaminated soil to the land disposal facility. A copy of the notice must be placed in the treatment facility's file.

      (1) No further notification is necessary until such time that the waste or receiving facility change, in which case a new notice must be sent and a copy placed in the treatment facility's file.

      (2) The one-time notice must include these requirements:

Treatment Facility Paperwork Requirements Table	
Required Information	Subsection 2
1. Hazardous waste number or numbers and manifest number of first shipment.	√
2. The waste is subject to the land disposal restrictions. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the land disposal restriction notice.	√
3. The notice must include the applicable wastewater/nonwastewater category (see subsections 7 and 11 of section 33-24-05-251), and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides).	√
4. Waste analysis data (when available).	√

5. For contaminated soil subject to land disposal restrictions as provided in subsection 1 of section 33-24-05-289, the constituents subject to treatment as described in subsection 4 of section 33-24-05-289, and the following statement: "This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by subsection 3 of section 33-24-05-289."	√
6. A certification is needed (see applicable section for exact wording).	√

- d. The treatment facility must submit a one-time certification signed by an authorized representative with the initial shipment of waste or treatment residue of a restricted waste to the land disposal facility. The certification must state:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in section 33-24-05-280 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

A certification is also necessary for contaminated soil and it must state:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in section 33-24-05-289 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(1) A copy of the certification must be placed in the treatment facility's onsite files. If the waste or treatment residue changes, or the receiving facility changes, a new certification must be sent to the receiving facility, and a copy placed in the file.

(2) Debris excluded from the definition of hazardous waste under subsection 5 of section 33-24-02-03 (for example, debris treated by an extraction or destruction technology provided by table 1, section 33-24-05-285, and debris that the department has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of subsection 4 rather than the certification requirements of this subsection.

(3) For wastes with organic constituents having treatment standards expressed as concentration levels, if compliance with the treatment standards is based in whole or in part on the analytical detection limit alternative specified in subsection 4 of section 33-24-05-280, the certification, signed by an authorized representative, must state the following:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible

for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in section 33-24-05-282, table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good-faith efforts to analyze for such constituents. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(4) For characteristic wastes that are subject to the treatment standards in section 33-24-05-280 (other than those expressed as a method of treatment), or section 33-24-05-289, and that contain underlying hazardous constituents as defined in subsection 10 of section 33-24-05-251; if these wastes are treated onsite to remove the hazardous characteristic; and are then sent offsite for treatment of underlying hazardous constituents, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of section 33-24-05-280 or 33-24-05-289 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(5) For characteristic wastes that contain underlying hazardous constituents as defined subsection 10 of section 33-24-05-251 that are treated onsite to remove the hazardous characteristic to treat underlying hazardous constituents to levels in section 33-24-05-288 universal treatment standards, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of section 33-24-05-280 to remove the hazardous characteristic and that underlying hazardous constituents, as defined in subsection 10 of section 33-24-05-251 have been treated onsite to meet the section 33-24-05-288 universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

e. If the waste or treatment residue will be further managed at a different treatment, storage, or disposal facility, the treatment, storage, or disposal facility sending the waste or treatment residue offsite must comply with the notice and certification requirements applicable to generators under this section.

f. Where the wastes are recyclable materials used in a manner constituting disposal subject to the provisions of subsection 2 of section 33-24-05-201 regarding treatment standards and prohibition levels, the owner or operator of a treatment facility (the recycler) must, for the initial shipment of waste, prepare a one-time certification described in subdivision d, and a one-time notice which includes the information listed in subdivision c (except the manifest number). The certification and notification must be placed in the facility's onsite files. If the waste or the receiving facility changes, a new certification and notification must be prepared and placed in the onsite files. In addition, the recycling facility must also keep records of the name and location of each entity receiving the hazardous waste-derived product.

3. Except where the owner or operator is disposing of any waste that is a recyclable material used in a manner constituting disposal pursuant to subsection 2 of section 33-24-05-201, the owner or operator of any land disposal facility disposing any waste subject to restrictions under sections 33-24-05-250 through 33-24-05-299 must:

a. Have copies of the notice and certifications specified in subsection 1 or 2.

b. Test the waste, or an extract of the waste or treatment residue developed using test method 1311 (the toxicity characteristic leaching procedure, described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05), to assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in sections 33-24-05-280 through 33-24-05-289. Such testing must be performed according to the frequency specified in the facility's waste analysis plan as required by section 33-24-05-04, or the applicable requirements of subsection 5 of section 33-24-06-16 for interim status facilities.

4. Generators or treaters who first claim that hazardous debris is excluded from the definition of hazardous waste under subsection 5 of section 33-24-02-03 (for example, debris treated by an extraction or destruction technology provided by table 1 in section 33-24-05-285, and debris that the department has determined does not contain hazardous waste) are subject to the following notification and certification requirements:

   a. A one-time notification, including the following information, must be submitted to the department:

      (1) The name and address of the nonhazardous waste facility receiving the treated debris;

      (2) A description of the hazardous debris as initially generated, including the applicable hazardous waste numbers; and

      (3) For debris excluded under subdivision a of subsection 5 of section 33-24-02-03, the technology from table 1, section 33-24-05-285, used to treat the debris.

   b. The notification must be updated if the debris is shipped to a different facility, and, for debris excluded under subdivision a of subsection 5 of section 33-24-02-03, if a different type of debris is treated or if a different technology is used to treat the debris.

   c. For debris excluded under subdivision a of subsection 5 of section 33-24-02-03, the owner or operator of the treatment facility must document and certify compliance with the treatment standards of table 1 in section 33-24-05-285, as follows:

      (1) Records must be kept of all inspections, evaluations, and analyses of treated debris that are made to determine compliance with the treatment standards;

      (2) Records must be kept of any data or information the treater obtains during treatment of the debris that identifies key operating parameters of the treatment unit; and

      (3) For each shipment of treated debris, a certification of compliance with the treatment standards must be signed by an authorized representative and placed in the facility's files. The certification must state the following:

      I certify under penalty of law that the debris has been treated in accordance with the requirements of section 33-24-05-285. I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment.

5. Generators and treaters who first receive from the department a determination that a given contaminated soil subject to the land disposal restrictions as provided in subsection 1 of section 33-24-05-289 no longer contains a listed hazardous waste and generators and treaters who first determine that a contaminated soil subject to the land disposal restrictions as provided in subsection 1 of section 33-24-05-289 no longer exhibits a characteristic of hazardous waste must:

a. Prepare a one-time only documentation of these determinations, including all supporting information; and

b. Maintain that information in the facility files and other records for a minimum of three years.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-257. [Reserved]

33-24-05-258. Special rules regarding wastes that exhibit a characteristic.

1. The initial generator of a solid waste must determine each hazardous waste number (waste code) applicable to the waste in order to determine the applicable treatment standards under sections 33-24-05-280 through 33-24-05-289. This determination may be made concurrently with the hazardous waste determination required in section 33-24-03-02. For purposes of sections 33-24-05-250 through 33-24-05-299, the waste will carry the waste code for any applicable listed waste (sections 33-24-02-15 through33-24-02-19). In addition, where the waste exhibits a characteristic, the waste will carry one or more of the characteristic waste codes (sections 33-24-02-10 through 33-24-02-14), except when the treatment standard for the listed waste operates in lieu of the treatment standard for the characteristic waste, as specified in subsection 2. If the generator determines that the generator's waste displays a hazardous characteristic (and is not D001 nonwastewaters treated by CMBST, RORGS, or POLYM of section 33-24-05-282, table 1), the generator must determine the underlying hazardous constituents (as defined at subsection 10 of section 33-24-05-251) in the characteristic waste.

2. Where a prohibited waste is both listed under sections 33-24-02-15 through 33-24-02-19 and exhibits a characteristic under sections 33-24-02-10 through 33-24-02-14, the treatment standard for the waste code listed in sections 33-24-02-15 through 33-24-02-19 will operate in lieu of the standard for the waste code under sections 33-24-02-10 through 33-24-02-14 provided that the treatment standard for the listed waste includes a treatment standard for the constituent that causes the waste to exhibit the characteristic. Otherwise, the waste must meet the treatment standards for all applicable listed and characteristic waste codes.

3. In addition to any applicable standards determined from the initial point of generation, no prohibited waste which exhibits a characteristic under sections 33-24-02-10 through 33-24-02-14 may be land disposed unless the waste complies with the treatment standards under sections 33-24-05-280 through 33-24-05-289.

4. Wastes that exhibit a characteristic are also subject to section 33-24-05-256 requirements, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generator's or treater's onsite files. The notification and certification must be updated if the process or operation generating the waste changes or if the permitted nonhazardous facility receiving the waste changes, or both change.

   a. The notification must include the following information:

      (1) The name and address of the permitted nonhazardous facility receiving the waste shipment; and

      (2) A description of the waste as initially generated, including the applicable codes, treatability groups, and underlying hazardous constituents (as defined in

subsection 10 of section 33-24-05-251), unless the waste will be treated and monitored for all underlying hazardous constituents. If all underlying hazardous constituents will be treated and monitored, there is no requirement to list any of the underlying hazardous constituents on the notice.

b. The certification must be signed by an authorized representative and must state the language specified in subdivision d of subsection 2 of section 33-24-05-256.

(1) If treatment removes the characteristic but does not meet standards applicable to underlying hazardous constituents, then the certification found in paragraph 4 of subdivision d of subsection 2 of section 33-24-05-256 applies.

(2) [Reserved]

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-259. [Reserved]

33-24-05-260. [Reserved]

33-24-05-261. [Reserved]

33-24-05-262. [Reserved]

33-24-05-263. [Reserved]

33-24-05-264. [Reserved]

33-24-05-265. Surface impoundment exemptions.

1. This section defines additional circumstances under which an otherwise prohibited waste may continue to be placed in a surface impoundment.

2. Wastes that are newly identified or listed under section 3001 after November 8, 1984, and stored in a surface impoundment that is newly subject to article 33-24 as a result of the additional identification or listing, may continue to be stored in the surface impoundment for forty-eight months after the promulgation of the additional listing or characteristic, notwithstanding that the waste is otherwise prohibited from land disposal, provided that the surface impoundment is in compliance with the requirements of subsection 5 of section 33-24-06-16 (subpart F of part 265 of 40 CFR) within twelve months after promulgation of the new listing or characteristic.

3. Wastes that are newly identified or listed under section 3001 after November 8, 1984, and treated in a surface impoundment that is newly subject to article 33-24 as a result of the additional identification or listing, may continue to be treated in that surface impoundment, notwithstanding that the waste is otherwise prohibited from land disposal, provided that surface impoundment is in compliance with the requirements of subsection 5 of section 33-24-06-16 (subpart F of part 265 of 40 CFR) within twelve months after the promulgation of the new listing or characteristic. In addition, if the surface impoundment continues to treat

hazardous waste after forty-eight months from promulgation of the additional listing or characteristic, it must then be in compliance with section 33-24-05-253.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-266. Waste specific prohibitions - Dyes or pigments, or both, production wastes.

1. Effective August 23, 2005, the waste specified in chapter 33-24-02 as hazardous waste number K181, and soil and debris contaminated with this waste, radioactive wastes mixed with this waste, and soil and debris contaminated with radioactive wastes mixed with this waste are prohibited from land disposal.

2. The requirements of subsection 1 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

   b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. The wastes meet the applicable treatment standards established pursuant to a petition granted under section 33-24-05-284;

   d. Hazardous debris has met the treatment standards in section 33-24-05-280, or the alternative treatment standards in 33-24-05-285; or

   e. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract, or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract, or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable sections 33-24-05-280 through 33-24-05-289 levels, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-267. [Reserved]

33-24-05-268. [Reserved]

33-24-05-269. [Reserved]

33-24-05-270. Waste specific prohibitions - Wood preserving wastes.

1. Effective August 11, 1997, the following wastes are prohibited from land disposal: the wastes specified in chapter 33-24-02 as hazardous waste numbers F032, F034, and F035.

2. Effective May 12, 1999, the following wastes are prohibited from land disposal: soil and debris contaminated with F032, F034, F035; and radioactive wastes mixed with hazardous waste numbers F032, F034, and F035.

3. Between May 12, 1997, and May 12, 1999, soil and debris contaminated with F032, F034, F035 and radioactive waste mixed with F032, F034, and F035 may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in subdivision b of subsection 8 of section 33-24-05-254.

4. The requirements of subsections 1 and 2 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

   b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under section 33-24-05-284; or

   d. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to those wastes covered by the extension.

5. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable universal treatment standards levels of section 33-24-05-288, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

History: Effective December 1, 1988; amended effective December 1, 1991; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-271. Waste specific prohibitions - Dioxin-containing wastes.

1. Effective November 8, 1988, the dioxin-containing wastes specified in section 33-24-02-16 as hazardous waste numbers F020, F021, F022, F023, F026, F027, and F028 are prohibited from land disposal unless the F020-F023 and F026-F028 dioxin-containing waste is contaminated soil and debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or a corrective action taken under article 33-24.

2. Effective November 8, 1990, the F020-F023 and F026-F028 dioxin-containing wastes listed in subsection 1 are prohibited from land disposal.

3. Between November 8, 1988, and November 8, 1990, wastes included in subsection 1 may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in subdivision b of subsection 8 of section 33-24-05-254 and all other applicable requirements of chapter 33-24-05.

4. The requirements of subsections 1 and 2 do not apply if:

   a. The wastes meet the standards of sections 33-24-05-280 through 33-24-05-289;

b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition; or

c. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to those wastes covered by the extension.

History: Effective December 1, 1988; amended effective December 1, 1991; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-272. Waste specific prohibitions - Soils exhibiting the toxicity characteristic for metals and containing polychlorinated biphenyls.

1. Effective December 26, 2000, the following wastes are prohibited from land disposal: any volumes of soil exhibiting the toxicity characteristic solely because of the presence of metals (D004 through D011) and containing polychlorinated biphenyls.

2. The requirements of subsection 1 do not apply if:

   a. The wastes:

      (1) Contain halogenated organic compounds in total concentration less than one thousand milligrams per kilogram; and

      (2) Meet the treatment standards specified in sections 33-24-05-280 through 33-24-05-289 for hazardous waste numbers D004 through D011, as applicable;

   b. The wastes:

      (1) Contain halogenated organic compounds in total concentration less than one thousand milligrams per kilogram; and

      (2) Meet the alternative treatment standards specified in section 33-24-05-289 for contaminated soil;

   c. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition; or

   d. The wastes meet applicable alternative treatment standards established pursuant to a petition granted under section 33-24-05-284.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-273. Waste specific prohibitions - Chlorinated aliphatic wastes.

1. Effective May 8, 2001, the wastes specified in chapter 33-24-02 as hazardous waste numbers K174 and K175, soil and debris contaminated with these wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal.

2. The requirements of subsection 1 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

c. The wastes meet the applicable treatment standards established pursuant to a petition granted under section 33-24-05-284;

d. Hazardous debris has met the treatment standards in section 33-24-05-280 or the alternative treatment standards in section 33-24-05-285; or

e. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable levels of sections 33-24-05-280 through 33-24-05-289, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

4. Disposal of K175 wastes that have complied with all applicable section 33-24-05-280 treatment standards must also be macroencapsulated in accordance with section 33-24-05-285 table 1 unless the waste is placed in:

a. An article 33-24 monofill containing only K175 wastes that meet all applicable section 33-24-05-280 treatment standards; or

b. A dedicated article 33-24 landfill cell in which all other wastes being codisposed are at pH of 6.0 or less.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-274. Waste specific prohibitions - Toxicity characteristic metal wastes.

1. Effective August 24, 1998, the following wastes are prohibited from land disposal: the wastes specified in chapter 33-24-02 as hazardous waste numbers D004 through D011 that are newly identified (for example, wastes, soil, or debris identified as hazardous by the toxic characteristic leaching procedure but not the extraction procedure), and waste, soil, or debris from mineral processing operations that is identified as hazardous by the specifications at chapter 33-24-02.

2. Effective November 26, 1998, the following waste is prohibited from land disposal: slag from secondary lead smelting which exhibits the toxicity characteristic due to the presence of one or more metals listed in section 33-24-02-14.

3. Effective May 26, 2000, the following wastes are prohibited from land disposal: newly identified characteristic wastes from elemental phosphorus processing, radioactive waste mixed with D004 through D011 wastes that are newly identified (for example, wastes, soil, or debris identified as hazardous by the toxic characteristic leaching procedure but not the extraction procedure); or mixed with newly identified characteristic mineral processing wastes, soil, or debris.

4. Between May 26, 1998, and May 26, 2000, newly identified characteristic wastes from elemental phosphorus processing, radioactive waste mixed with D004 through D011 wastes that are newly identified (for example, wastes, soil, or debris identified as hazardous by the toxicity characteristic leaching procedure but not the extraction procedure), or mixed with newly identified characteristic mineral processing wastes, soil, or debris may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in subsection 8 of section 33-24-05-254.

5. The requirements of subsections 1 and 2 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

   b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under section 33-24-05-284; or

   d. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to these wastes covered by the extension.

6. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents (including underlying hazardous constituents in characteristic wastes) in excess of the applicable universal treatment standard levels of section 33-24-05-288, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

History: Effective December 1, 1991; amended effective July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-275. Waste specific prohibitions - Petroleum refining wastes.

1. Effective February 8, 1999, the wastes specified in chapter 33-24-02 as hazardous waste numbers K169, K170, K171, and K172, soils and debris contaminated with these wastes, radioactive wastes mixed with these hazardous wastes, and soils and debris contaminated with these radioactive mixed wastes, are prohibited from land disposal.

2. The requirements of subsection 1 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

   b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. The wastes meet the applicable treatment standards established pursuant to a petition granted under section 33-24-05-284;

   d. Hazardous debris that has met treatment standards in section 33-24-05-280 or in the alternative treatment standards in section 33-24-05-285; or

e. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable universal treatment standard levels of section 33-24-05-288, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-276. Waste specific prohibitions - Inorganic chemical wastes.

1. Effective May 20, 2002, the wastes specified in chapter 33-24-02 as hazardous waste numbers K176, K177, and K178, and soil and debris contaminated with these wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal.

2. The requirements of subsection 1 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

   b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. The wastes meet the applicable treatment standards established pursuant to a petition granted under section 33-24-05-284;

   d. Hazardous debris has met the treatment standards in section 33-24-05-280 or the alternative treatment standards in section 33-24-05-285; or

   e. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to these wastes covered by the extension.

3. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable levels provided in sections 33-24-05-280 through 33-24-05-289, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-277. Waste specific prohibitions - Ignitable and corrosive characteristic wastes whose treatment standards were vacated.

1. Effective August 9, 1993, the wastes specified in section 33-24-02-11 as D001 (and is not in the high total organic compound ignitable liquids subcategory), and specified in section 33-24-02-12 as D002, that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in Clean Water Act equivalent treatment before ultimate land disposal, are prohibited from land disposal. Clean Water Act equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation or sedimentation or both for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

2. Effective February 10, 1994, the wastes specified in section 33-24-02-11 as D001 (and is not in the high total organic compound ignitable liquids subcategory), and specified in section 33-24-02-12 as D002, that are managed in systems defined in 40 CFR 144.6(e) and 146.6(e) as class V injection wells, that do not engage in Clean Water Act-equivalent treatment before injection, are prohibited from land disposal.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-278. Waste specific prohibitions - Newly identified organic toxicity characteristic wastes and newly listed coke byproduct and chlorotoluene production wastes.

1. Effective December 19, 1994, the wastes specified in section 33-24-02-17 as hazardous waste numbers K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151 are prohibited from land disposal. In addition, debris contaminated with hazardous waste numbers F037, F038, K107 through K112, K117, K118, K123 through K126, K131, K132, K136, U328, U353, U359, and soil and debris contaminated with D012 through D043, K141 through K145, and K147 through K151 are prohibited from land disposal. The following wastes that are specified in section 33-24-02-14, table 1 as hazardous waste numbers: D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, and D043 that are not radioactive, or that are managed in systems other than those whose discharge is regulated under the Clean Water Act, or that are zero discharges that do not engage in Clean Water Act-equivalent treatment before ultimate land disposal, or that are injected in class I deep wells regulated under the Safe Drinking Water Act, are prohibited from land disposal. Clean Water Act-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation or sedimentation, or both, for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies.

2. On September 19, 1996, radioactive wastes that are mixed with D018 through D043 that are managed in systems other than those whose discharge is regulated under the Clean Water Act, or that inject in class I deep wells regulated under the Safe Drinking Water Act, or that are zero dischargers that engage in Clean Water Act-equivalent treatment before ultimate land disposal, are prohibited from land disposal. Clean Water Act-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation or sedimentation, or both, for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies. Radioactive wastes mixed with K141 through K145, and K147 through

K151 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

3. Between December 19, 1994, and September 19, 1996, the wastes included in subsection 2 may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in subdivision b of subsection 8 of section 33-24-05-254.

4. The requirements of subsections 1, 2, and 3 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

   b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under section 33-24-05-284; or

   d. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to these wastes covered by the extension.

5. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable levels found in sections 33-24-05-280 through 33-24-05-289, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-279. Waste specific prohibitions - Spent aluminum potliners; reactive; and carbamate wastes.

1. On July 8, 1996, the wastes specified in section 33-24-02-17 as hazardous waste numbers K156 through K159, and K161; and in section 33-24-02-18 as hazardous waste numbers P127, P128, P185, P188 through P192, P194, P196 through P199, P201 through P205, U271, U278 through U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409 through U411 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

2. On July 8, 1996, the wastes identified in section 33-24-02-13 as D003 that are managed in systems other than those whose discharge is regulated under the Clean Water Act, or that inject in class I deep wells regulated under the Safe Drinking Water Act, or that are zero dischargers that engage in Clean Water Act-equivalent treatment before ultimate land disposal, are prohibited from land disposal. This prohibition does not apply to unexploded ordnance and other explosive devices which have been the subject of an emergency response. (Such D003 wastes are prohibited unless they meet the treatment standard of DEACT before land disposal (see section 33-24-05-280)).

3. On September 21, 1998, the wastes specified in section 33-24-02-17 as hazardous waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

4. On April 8, 1998, radioactive wastes mixed with K088, K156 through K159, K161, P127, P128, P185, P188 through P192, P194, P196 through P199, P201 through P205, U271, U278 through U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409 through U411 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

5. Between July 8, 1996, and April 8, 1998, the wastes included in subsections 1, 3, and 4 may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in subdivision b of subsection 8 of section 33-24-05-254.

6. The requirements of subsections 1 through 4 do not apply if:

   a. The wastes meet the applicable treatment standards specified in sections 33-24-05-280 through 33-24-05-289;

   b. Persons have been granted an exemption from a prohibition pursuant to a petition under section 33-24-05-255, with respect to those wastes and units covered by the petition;

   c. The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under section 33-24-05-284; or

   d. Persons have been granted an extension to the effective date of a prohibition pursuant to section 33-24-05-254, with respect to these wastes covered by the extension.

7. To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 33-24-05-280, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable sections 33-24-05-280 through 33-24-05-289 levels, the waste is prohibited from land disposal, and all requirements of sections 33-24-05-250 through 33-24-05-299 are applicable, except as otherwise specified.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-280. Applicability of treatment standards.

1. A prohibited waste identified in the table "Treatment Standards for Hazardous Wastes" may be land disposed only if it meets the requirements found in the table. For each waste, the table identifies one of three types of treatment standard requirements:

   a. All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste ("Total Waste Standards");

   b. The hazardous constituents in the extract of the waste or in the extract of the treatment residue must be at or below the values found in the table ("Waste Extract Standards"); or

   c. The waste must be treated using the technology specified in the table ("Technology Standard"), which are described in detail in section 33-24-05-282, table 1-Technology Codes and Description of Technology-Based Standards.

2. For wastewaters, compliance with concentration level standards is based on maximums for any one day, except for D004 through D011 wastes for which the previously promulgated treatment standards based on grab samples remain in effect. For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered

by the waste extract standards, the test method 1311, the toxicity characteristic leaching procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: method 1311, or method 1310B, the extraction procedure toxicity test. For wastes covered by a technology standard, the wastes may be land disposed after being treated using that specified technology or an equivalent treatment technology approved by the administrator under the procedures set forth in subsection 2 of section 33-24-05-282.

3. When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.

4. Notwithstanding the prohibitions specified in subsection 1, treatment and disposal facilities may demonstrate (and certify pursuant to subdivision e of subsection 2 of section 33-24-05-256) compliance with the treatment standards for organic constituents specified by a footnote in the table "Treatment Standards for Hazardous Wastes" in this section, provided the following conditions are satisfied:

   a. The treatment standards for the organic constituents were established based on incineration in units operated in accordance with the technical requirements of sections 33-24-05-144 through 33-24-05-159, or based on combustion in fuel substitution units operating in accordance with applicable technical requirements;

   b. The treatment or disposal facility has used the methods referenced in subdivision a to treat the organic constituents; and

   c. The treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude.

5. For characteristic wastes (D001 through D043) that are subject to treatment standards in the following table "Treatment Standards for Hazardous Wastes", and are not managed in a wastewater treatment system that is regulated under the Clean Water Act, that is CWA-equivalent, or that is injected into a class I nonhazardous deep injection well, all underlying hazardous constituents (as defined in subsection 10 of section 33-24-05-251) must meet universal treatment standards, found in section 33-24-05-288, table "Universal Treatment Standards", prior to land disposal as defined in subsection 6 of section 33-24-05-251.

6. The treatment standards for F001 through F005 nonwastewater constituents carbon disulfide, cyclohexanone, or methanol apply to wastes which contain only one, two, or three of these constituents. Compliance is measured for these constituents in the waste extract from test method 1311, the toxicity characteristic leaching procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05. If the waste contains any of these three constituents along with any of the other twenty-five constituents found in F001 through F005, then compliance with treatment standards for carbon disulfide, cyclohexanone, or methanol are not required.

7. Between August 26, 1996, and March 4, 1999, the treatment standards for the wastes specified in section 33-24-02-17 as hazardous waste numbers K156 through K159 and K161; and in section 33-24-02-18 as hazardous waste numbers P127, P128, P185, P188 through P192, P194, P196 through P199, P201 through P205, U271, U277 through U280, U364

through U367, U372, U373, U375 through U379, U381 through U387, U389 through U396, U400 through U404, U407, and U409 through U411; and soil contaminated with these wastes; may be satisfied by either meeting the constituent concentrations presented in the table "Treatment Standards for Hazardous Waste", or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST in table 1 in section 33-24-05-282, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined by the technology code CMBST in table 1 of section 33-24-05-282, for wastewaters.

8. Prohibited D004 through D011 mixed radioactive wastes and mixed radioactive listed wastes containing metal constituents, that were previously treated by stabilization to the treatment standards in effect at that time and then put into storage, do not have to be retreated to meet treatment standards in this section prior to land disposal.

9. [Reserved]

10. Effective September 4, 1998, the treatment standards for the wastes specified in section 33-24-02-18 as hazardous waste numbers P185, P191, P192, P197, U364, U394, and U395 may be satisfied by either meeting the constituent concentrations presented in the table "Treatment Standards for Hazardous Wastes" in this section, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST in table 1 of section 33-24-05-282, for nonwastewaters; and biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined by the technology code CMBST in table 1 in section 33-24-05-282, for wastewaters.

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
D001[9]	Ignitable characteristic wastes, except for the subdivision a of subsection 1 of section 33-24-02-11 high total organic carbon subcategory.	NA	NA	DEACT and meet section 33-24-05-288 standards[8]; or RORGS; or CMBST	DEACT and meet section 33-24-05-288 standards[8]; or RORGS; or CMBST
	High total organic carbon ignitable characteristic liquids subcategory based on subdivision a of subsection 1 of section 33-24-02-11 - Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	RORGS; CMBST; or POLYM
D002[9]	Corrosive characteristic wastes.	NA	NA	DEACT and meet section 33-24-05-288 standards[8]	DEACT and meet section 33-24-05-288 standards[8]
D002, D004, D005, D006, D007, D008, D009, D010, D011	Radioactive high level wastes generated during the reprocessing of fuel rods. (Note: This subcategory consists of nonwastewaters only.)	Corrosivity (pH)	NA	NA	HLVIT
		Arsenic	7440-38-2	NA	HLVIT
		Barium	7440-39-3	NA	HLVIT
		Cadmium	7440-43-9	NA	HLVIT
		Chromium (Total)	7440-47-3	NA	HLVIT
		Lead	7439-92-1	NA	HLVIT
		Mercury	7439-97-6	NA	HLVIT
		Selenium	7782-49-2	NA	HLVIT
		Silver	7440-22-4	NA	HLVIT

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
D003[9]	Reactive sulfides subcategory based on subdivision e of subsection 1 of section 33-24-02-13.	NA	NA	DEACT	DEACT
	Explosives subcategory based on subdivisions f, g, and h of subsection 1 of section 33-24-02-13.	NA	NA	DEACT and meet section 33-24-05-288 standards[8]	DEACT and meet section 33-24-05-288 standards[8]
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other reactives subcategory based on subdivision a of subsection 1 of section 33-24-02-13.	NA	NA	DEACT and meet section 33-24-05-288 standards[8]	DEACT and meet section 33-24-05-288 standards[8]
	Water reactive subcategory based on subdivisions b, c, and d of subsection 1 of section 33-24-02-13. (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	DEACT and meet section 33-24-05-288 standards[8]
	Reactive cyanides subcategory based on subdivision e of subsection 1 of section 33-24-02-13.	Cyanides (Total)[7]	57-12-5	Reserved	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
D004[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Arsenic	7440-38-2	1.4 and meet section 33-24-05-288 standards[8]	5.0 mg/l TCLP and meet section 33-24-05-288 standards[8]
D005[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Barium	7440-39-3	1.2 and meet section 33-24-05-288 standards[8]	2.1 mg/l TCLP and meet section 33-24-05-288 standards[8]
D006[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Cadmium	7440-43-9	0.69 and meet section 33-24-05-288 standards[8]	0.11 mg/l TCLP and meet section 33-24-05-288 standards[8]
	Cadmium containing batteries subcategory (Note: This subcategory consists of nonwastewaters only.)	Cadmium	7440-43-9	NA	RTHRM

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
	Radioactively contaminated cadmium containing batteries. (Note: This subcategory consists of nonwastewaters only.)	Cadmium	7440-43-9	NA	Macroencapsulation in accordance with section 33-24-05-285
D007[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Chromium (Total)	7440-47-3	2.77 and meet section 33-24-05-288 standards[8]	0.60 mg/l TCLP and meet section 33-24-05-288 standards[8]
D008[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Lead	7439-92-1	0.69 and meet section 33-24-05-288 standards[8]	0.75 mg/l TCLP and meet section 33-24-05-288 standards[8]
	Lead acid batteries subcategory (Note: This standard only applies to lead acid batteries that are identified as Resource Conservation and Recovery Act hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of sections 33-24-05-250 through 33-24-05-299 or exempted under other regulations. This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	RLEAD
	Radioactive lead solids subcategory (Note: These lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organo-lead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	MACRO

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
D009[9]	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues (high mercury-organic subcategory).	Mercury	7439-97-6	NA	IMERC; OR RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC (high mercury-inorganic subcategory).	Mercury	7439-97-6	NA	RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury (low mercury subcategory).	Mercury	7439-97-6	NA	0.20 mg/l TCLP and meet section 33-24-05-288 standards[8]
	All other nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are not residues from RMERC (low mercury subcategory).	Mercury	7439-97-6	NA	0.25 mg/l TCLP and meet section 33-24-05-288 standards[8]
	All D009 wastewaters.	Mercury	7439-97-6	0.15	NA
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	AMLGM

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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	Hydraulic oil contaminated with mercury radioactive materials subcategory. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	IMERC
	Radioactively contaminated mercury containing batteries. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	Macroencapsulation in accordance with section 33-24-05-285
D010[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Selenium	7782-49-2	0.82 and meet section 33-24-05-288 standards[8]	5.7 mg/l TCLP and meet section 33-24-05-288 standards[8]
D011[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Silver	7440-22-4	0.43 and meet section 33-24-05-288 standards[8]	0.14 mg/l TCLP and meet section 33-24-05-288 standards[8]
	Radioactively contaminated silver containing batteries. (Note: This subcategory consists of nonwastewaters only.)	Silver	7440-22-4	NA	Macroencapsulation in accordance with section 33-24-05-285
D012[9]	Wastes that are toxicity characteristic for endrin based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Endrin	72-20-8	BIODG; or CMBST	0.13 and meet section 33-24-05-288 standards[8]
		Endrin aldehyde	7421-93-4	BIODG; or CMBST	0.13 and meet section 33-24-05-288 standards[8]
D013[9]	Wastes that are toxicity characteristic for lindane based on the toxicity characteristic leaching procedure in SW846 Method 1311.	alpha-BHC	319-84-6	CARBN; or CMBST	0.066 and meet section 33-24-05-288 standards[8]
		beta-BHC	319-85-7	CARBN; or CMBST	0.066 and meet section 33-24-05-288 standards[8]
		delta-BHC	319-86-8	CARBN; or CMBST	0.066 and meet section 33-24-05-288 standards[8]
		gamma-BHC (Lindane)	58-89-9	CARBN; or CMBST	0.066 and meet section 33-24-05-288 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
D014[9]	Wastes that are toxicity characteristic for methoxychlor based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Methoxychlor	72-43-5	WETOX or CMBST	0.18 and meet section 33-24-05-288 standards[8]
D015[9]	Wastes that are toxicity characteristic for toxaphene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Toxaphene	8001-35-2	BIODG or CMBST	2.6 and meet section 33-24-05-288 standards[8]
D016[9]	Wastes that are toxicity characteristic for 2,4-D(2,4-Dichlorophenoxyacetic acid) based on the toxicity characteristic leaching procedure in SW 846 Method 1311.	2,4-D(2,4-Dichlorophenoxyacetic acid)	94-75-7	CHOXD; BIODG; or CMBST	10 and meet section 33-24-05-288 standards[8]
D017[9]	Wastes that are toxicity characteristic for 2,4,5-TP(Silvex) based on the toxicity characteristic leaching procedure in SW846 Method 1311.	2,4,5-TP(Silvex)	93-72-1	CHOXD or CMBST	7.9 and meet section 33-24-05-288 standards[8]
D018[9]	Wastes that are toxicity characteristic for benzene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Benzene	71-43-2	0.14 and meet section 33-24-05-288 standards[8]	10 and meet section 33-24-05-288 standards[8]
D019[9]	Wastes that are toxicity characteristic for carbon tetrachloride based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Carbon tetrachloride	56-23-5	0.057 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]
D020[9]	Wastes that are toxicity characteristic for chlordane based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033 and meet section 33-24-05-288 standards[8]	0.26 and meet section 33-24-05-288 standards[8]
D021[9]	Wastes that are toxicity characteristic for chlorobenzene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Chlorobenzene	108-90-7	0.057 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]
D022[9]	Wastes that are toxicity characteristic for chloroform based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Chloroform	67-66-3	0.046 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
D023[9]	Wastes that are toxicity characteristic for o-cresol based on the toxicity characteristic leaching procedure in SW846 Method 1311.	o-Cresol	95-48-7	0.11 and meet section 33-24-05-288 standards[8]	5.6 and meet section 33-24-05-288 standards[8]
D024[9]	Wastes that are toxicity characteristic for m-cresol based on the toxicity characteristic leaching procedure in SW846 Method 1311.	m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77 and meet section 33-24-05-288 standards[8]	5.6 and meet section 33-24-05-288 standards[8]
D025[9]	Wastes that are toxicity characteristic for p-cresol based on the toxicity characteristic leaching procedure in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77 and meet section 33-24-05-288 standards[8]	5.6 and meet section 33-24-05-288 standards[8]
D026[9]	Wastes that are toxicity characteristic for cresols (total) based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88 and meet section 33-24-05-288 standards[8]	11.2 and meet section 33-24-05-288 standards[8]
D027[9]	Wastes that are toxicity characteristic for p-dichloro-benzene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene)	106-46-7	0.090 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]
D028[9]	Wastes that are toxicity characteristic for 1,2-dichloroethane based on the toxicity characteristic leaching procedure in SW846 Method 1311.	1,2-Dichloroethane	107-06-2	0.21 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]
D029[9]	Wastes that are toxicity characteristic for 1,1-dichloroethylene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	1,1-Dichloroethylene	75-35-4	0.025 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]
D030[9]	Wastes that are toxicity characteristic for 2,4-dinitrotoluene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	2,4-Dinitrotoluene	121-14-2	0.32 and meet section 33-24-05-288 standards[8]	140 and meet section 33-24-05-288 standards[8]
D031[9]	Wastes that are toxicity characteristic for heptachlor based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Heptachlor	76-44-8	0.0012 and meet section 33-24-05-288 standards[8]	0.066 and meet section 33-24-05-288 standards[8]
		Heptachlor epoxide	1024-57-3	0.016 and meet section 33-24-05-288 standards[8]	0.066 and meet section 33-24-05-288 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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D032[9]	Wastes that are toxicity characteristic for hexachloro- benzene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Hexachlorobenzene	118-74-1	0.055 and meet section 33-24-05-288 standards[8]	10 and meet section 33-24-05-288 standards[8]
D033[9]	Wastes that are toxicity characteristic for hexachlorobutadiene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Hexachlorobutadiene	87-68-3	0.055 and meet section 33-24-05-288 standards[8]	5.6 and meet section 33-24-05-288 standards[8]
D034[9]	Wastes that are toxicity characteristic for hexachloroethane based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Hexachloroethane	67-72-1	0.055 and meet section 33-24-05-288 standards[8]	30 and meet section 33-24-05-288 standards[8]
D035[9]	Wastes that are toxicity characteristic for methyl ethyl ketone based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Methyl ethyl ketone	78-93-3	0.28 and meet section 33-24-05-288 standards[8]	36 and meet section 33-24-05-288 standards[8]
D036[9]	Wastes that are toxicity characteristic for nitrobenzene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Nitrobenzene	98-95-3	0.068 and meet section 33-24-05-288 standards[8]	14 and meet section 33-24-05-288 standards[8]
D037[9]	Wastes that are toxicity characteristic for pentachlorophenol based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Pentachlorophenol	87-86-5	0.089 and meet section 33-24-05-288 standards[8]	7.4 and meet section 33-24-05-288 standards[8]
D038[9]	Wastes that are toxicity characteristic for pyridine based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Pyridine	110-86-1	0.014 and meet section 33-24-05-288 standards[8]	16 and meet section 33-24-05-288 standards[8]
D039[9]	Wastes that are toxicity characteristic for tetrachloroethylene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Tetrachloroethylene	127-18-4	0.056 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]
D040[9]	Wastes that are toxicity characteristic for trichloroethylene based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Trichloroethylene	79-01-6	0.054 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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D041[9]	Wastes that are toxicity characteristic for 2,4,5-trichlorophenol based on the toxicity characteristic leaching procedure in SW846 Method 1311.	2,4,5-Trichlorophenol	95-95-4	0.18 and meet section 33-24-05-288 standards[8]	7.4 and meet section 33-24-05-288 standards[8]
D042[9]	Wastes that are toxicity characteristic for 2,4,6-trichlorophenol based on the toxicity characteristic leaching procedure in SW846 Method 1311.	2,4,6-Trichlorophenol	88-06-2	0.035 and meet section 33-24-05-288 standards[8]	7.4 and meet section 33-24-05-288 standards[8]
D043[9]	Wastes that are toxicity characteristic for vinyl chloride based on the toxicity characteristic leaching procedure in SW846 Method 1311.	Vinyl chloride	75-01-4	0.27 and meet section 33-24-05-288 standards[8]	6.0 and meet section 33-24-05-288 standards[8]
F001, F002, F003, F004, & F005	F001, F002, F003, F004 and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluorethane, trichloroethylene, trichloromonofluoromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in section 33-24-02-16.	Acetone	67-64-1	0.28	160
		Benzene	71-42-2	0.14	10
		n-Butyl alcohol	71-36-3	5.6	2.6
		Carbon disulfide	75-15-0	3.8	NA
		Carbon tetrachloride	56-23-5	0.057	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		Chlorobenzene	108-90-7	0.057	6.0
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3		
		Cyclohexanone	108-94-1	0.36	NA
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Ethyl acetate	141-78-6	0.34	33
		Ethyl benzene	100-41-4	0.057	10
		Ethyl ether	60-29-7	0.12	160
		Isobutyl alcohol	78-83-1	5.6	170
		Methanol	67-56-1	5.6	NA
		Methylene chloride	75-9-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Nitrobenzene	98-95-3	0.068	14
		Pyridine	110-86-1	0.014	16
		Tetrachloroethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
		1,1,1-Trichlorethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
		Trichloroethylene	79-01-6	0.054	6.0
		Trichloromonofluoromethane	75-69-4	0.020	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
	F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001-5 solvents: carbon disulfide, cyclohexanone, and/or methanol (formerly subsection 3 of section 33-24-05-281).	Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
		Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
		Methanol	67-56-1	5.6	0.75 mg/l TCLP
	F005 solvent waste containing 2-nitropropane as the only listed F001-F005 solvent.	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
	F005 solvent waste containing 2-ethoxyethanol as the only listed F001-F005 solvent.	2-Ethoxyethanol	110-80-5	BIODG; or CMBST	CMBST
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	Cadmium	7440-43-9	.069	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590

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		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cadmium	7440-31-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium Chromium (Total)	7440-43-9 7440-47-3	NA 2.77	0.11 mg/l TCLP 0.60mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	NA
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium Chromium (Total)	7440-43-9 7440-47-3	NA 2.77	0.11 mg/l TCLP 0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590

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		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
F020, F021, F022, F023, F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives, excluding wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F020); (2) pentachlorophenol, or of intermediates used to produce its derivatives (for example, F021); (3) tetra-, penta-, or hexachloro-benzenes under alkaline conditions (for example, F022; and from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenols, excluding wastes from equipment used only for the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F023); (2) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (for example, F026).	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in section 33-24-02-16 or 33-24-02-17.)	All F024 Wastes	NA	CMBST[11]	CMBST[11]
		2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
		3-Chloropropylene	107-05-1	0.036	30
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Hexachloroethane	67-72-1	0.055	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
F025	Condensed light ends from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025 - Light ends subcategory.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0
	Spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025 - Spent filters/aids and desiccants subcategory.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols (this listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component).	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with hazardous wastes numbers F020, F021, F023, F026, and F027.	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.30	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with section 33-24-02-19 or potentially cross-contaminated wastes that are otherwise regulated as hazardous wastes (for example, F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		2-4-Dimethyl phenol	105-67-9	0.036	14
		Fluorene	86-73-7	0.059	3.4
		Hexachlorodibenzo-p-dioxins	NA	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Hexachlorodibenzofurans	NA	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Pentachlorodibenzo-p-dioxins	NA	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Pentachlorodibenzofurans	NA	0.000035 or CMBST[11]	0.001 or CMBST[11]
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Tetrachlorodibenzo-p-dioxins	NA	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Tetrachlorodibenzofurans	NA	0.000063 or CMBST[11]	0.001 or CMBST[11]
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (total)	7440-47-3	2.77	0.60 mg/l TCLP
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Fluorene	86-73-7	0.059	3.4
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (total)	7440-47-3	2.77	0.60 mg/l TCLP
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (total)	7440-47-3	2.77	0.60 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
F037	Petroleum refinery primary oil/water/solids separation sludge-any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from noncontact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in subdivision b of subsection 2 of section 33-24-02-16 (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11.0 mg/l TCLP
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from noncontact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in subdivision b of subsection 2 of section 33-24-02-16 (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological units) and F037, K048, and K051 are not included in this listing.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11.0 mg/l TCLP
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under sections 33-24-05-280 through 33-24-05-289 (leachate resulting from the disposal of one or more of the following hazardous wastes and no other hazardous wastes retains its hazardous waste number(s): F020, F021, F022, F026, F027, and/or F028).	Acenaphthylene	208-96-8	0.059	3.4
		Acenaphthene	83-32-9	0.059	3.4
		Acetone	67-64-1	0.28	160
		Acetonitrile	75-05-8	5.6	NA
		Acetophenone	96-86-2	0.010	9.7
		2-Acetylaminofluorene	53-96-3	0.059	140
		Acrolein	107-02-8	0.29	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Acrylonitrile	107-13-1	0.24	84
		Aldrin	309-00-2	0.021	0.066
		4-Aminobiphenyl	92-67-1	0.13	NA
		o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
		Aniline	62-53-3	0.81	14
		Anthracene	120-12-7	0.059	3.4
		Aramite	140-57-8	0.36	NA
		alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.0.066
		gamma-BHC	58-89-9	0.0017	0.066
		Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Bromodichloromethane	75-27-4	0.35	15
		Methyl bromide (Bromomethane)	74-83-9	0.11	15
		4-Bromophenyl phenyl ether	101-55-3	0.055	15
		n-Butyl alcohol	71-36-3	5.6	2.6
		Butyl benzyl phthalate	85-68-7	0.017	28
		2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
		Carbondisulfide	75-15-0	3.8	NA
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		p-Chloroaniline	106-47-8	0.46	16
		Chlorobenzene	108-90-7	0.057	6.0
		Chlorobenzilate	510-15-6	0.10	NA
		2-Chloro-1,3-butadiene	126-99-8	0.057	NA
		Chlorodibromomethane	124-48-1	0.057	15
		Chloroethane	75-00-3	0.27	6.0
		bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
		bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		Chloroform	67-66-3	0.046	6.0
		bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
		p-Chloro-m-cresol	59-50-7	0.018	14
		Chloromethane (Methyl chlorida)	74-87-3	0.19	30
		2-Chloronaphthalene	91-58-7	0.055	5.6
		2-Chlorophenol	95-57-8	0.044	5.7
		3-Chloropropylene	107-05-1	0.036	30
		Chrysene	218-01-9	0.059	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		p-Cresidine	120-71-8	0.010	0.66
		Cyclohexanone	108-94-1	0.36	NA
		1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
		Dibromomethane	74-95-3	0.11	15
		2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10
		o,p'-DDD	53-19-0	0.023	0.087

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		p,p'-DDD	72-54-8	0.023	0.087
		o,p'-DDE	3424-82-6	0.031	0.087
		p,p'-DDE	72-55-9	0.031	0.087
		o,p'-DDT	789-02-6	0.0039	0.087
		p,p'-DDT	50-29-3	0.0039	0.087
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Dibenz(a,e)pyrene	192-65-4	0.061	NA
		m-Dichlorobenzene	541-73-1	0.036	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Dichlorodifluoromethane	75-71-8	0.23	7.2
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		trans-1,2-Dichloroethylene	156-60-5	0.054	30
		2,4-Dichlorophenol	120-83-2	0.044	14
		2,6-Dichlorophenol	87-65-0	0.044	14
		1,2-Dichloropropane	78-87-5	0.85	18
		cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
		Dieldrin	60-57-1	0.017	0.13
		Diethyl phthalate	84-66-2	0.20	28
		2,4-Dimethylaniline (2,4-xylidine)	95-68-1	0.010	0.66
		2-4-Dimethyl phenol	105-67-9	0.036	14
		Dimethyl phthalate	131-11-3	0.047	28
		Di-n-butyl phthalate	87-74-2	0.057	28
		1,4-Dinitrobenzene	100-25-4	0.32	2.3

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		4,6-Dinitro-o-cresol	534-52-1	0.28	160
		2,4-Dinitrophenol	51-28-5	0.12	160
		2,4-Dinitrotoluene	121-14-2	0.32	140
		2,6-Dinitrotoluene	606-20-2	0.55	28
		Di-n-octyl phthalate	117-84-0	0.017	28
		Di-n-propylnitrosamine	621-64-7	0.40	14
		1,4-Dioxane	123-91-1	12.0	170
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		1,2-Diphenylhydrazine	122-66-7	0.087	NA
		Disulfoton	298-04-4	0.017	6.2
		Endosulfan I	939-98-8	0.023	0.066
		Endosulfan II	33213-6-5	0.029	0.13
		Endosulfan sulfate	131-07-8	0.029	0.13
		Endrin	72-20-8	0.0028	0.13
		Endrin aldehyde	7421-93-4	0.025	0.13
		Ethyl acetate	141-78-6	0.34	33
		Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
		Ethyl benzene	100-41-4	0.057	10
		Ethyl ether	60-29-7	0.12	160
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Ethyl methacrylate	97-63-2	0.14	160
		Ethylene oxide	75-21-8	0.12	NA
		Famphur	52-85-7	0.017	15
		Fluoranthene	206-44-0	0.068	3.4
		Fluorene	86-73-7	0.059	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
		1,2,3,4,6,7,8- Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035	0.0025
		1,2,3,4,7,8,9- Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7	0.000035	0.0025
		1,2,3,4,6,7,8- Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035	0.0025
		Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		HxCDDs (All Hexa-chlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		Hexachloroethane	67-72-1	0.055	30
		Hexachloropropylene	1888-71-7	0.035	30
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Iodomethane	74-88-4	0.19	65
		Isobutyl alcohol	78-83-1	5.6	170
		Isodrin	465-73-6	0.021	0.066
		Isosafrole	120-58-1	0.081	2.6
		Kepone	143-50-8	0.0011	0.13
		Methacrylonitrile	126-98-7	0.24	84
		Methanol	67-56-1	5.6	NA
		Methapyrilene	91-80-5	0.081	1.5
		Methoxychlor	72-43-5	0.25	0.18
		3-Methylcholanthrene	56-49-5	0.0055	15
		4,4-Methylene bis(2- chloroaniline)	101-14-4	0.50	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Methyl methacrylate	80-62-6	0.14	160
		Methyl methansulfonate	66-27-3	0.018	NA
		Methyl parathion	298-00-0	0.014	4.6
		Naphthalene	91-20-3	0.059	5.6
		2-Naphthylamine	91-59-8	0.52	NA
		p-Nitroaniline	100-01-6	0.028	28
		Nitrobenzene	98-95-3	0.068	14
		5-Nitro-o-toluidine	99-55-8	0.32	28
		p-Nitrophenol	100-02-7	0.12	29
		N-Nitrosodiethylamine	55-18-5	0.40	28
		N-Nitrosodimethylamine	62-75-9	0.40	NA
		N-Nitroso-di-n-butylamine	924-16-3	0.40	17
		N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
		N-Nitrosomorpholine	59-89-2	0.40	2.3
		N-Nitrosopiperidine	100-75-4	0.013	35
		N-Nitrosopyrrolidine	930-55-2	0.013	35
		1,2,3,4,6,7,8,9- Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063	0.005
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063	0.0025
		Parathion	56-38-2	0.014	4.6
		Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
		Pentachlorobenzene	608-93-5	0.055	10
		PeCDDs (All Penta-chlorodibenzo-p-dioxins)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		PeCDFs (All Pentachlorodi-benzofurans)	NA	0.000035	0.001
		Pentachloronitrobenzene	82-68-8	0.055	4.8
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenacetin	62-44-2	0.081	16
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		1,3-Phenylenediamine	108-45-2	0.010	0.66
		Phorate	298-02-2	0.021	4.6
		Phthalic anhydride	85-44-9	0.055	NA
		Pronamide	23950-58-5	0.093	1.5
		Pyrene	129-00-0	0.067	8.2
		Pyridine	110-86-1	0.014	16
		Safrole	94-59-7	0.081	22
		Silvex (2,4,5-TP)	93-72-1	0.72	7.9
		2,4,5-T	93-76-5	0.72	7.9
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		TCDDs (All Tetra-chlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetra- chlorodibenzofurans)	NA	0.000063	0.001
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		Toluene	108-88-3	0.080	10
		Toxaphene	8001-35-2	0.0095	2.6
		Bromoform (Tribromomethane)	75-25-2	0.63	15
		1,2,4-Trichlorobenzene	120-82-1	0.055	19

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Trichloromonofluoromethane	75-69-4	0.020	30
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		1,2,3-Trichloropropane	96-18-4	0.85	30
		1,1,2-Trichloro-1,2,2- trifluoroethane	76-13-1	0.057	30
		tris(2,3-Dibromopropyl) phosphate	126-72-7	0.11	NA
		Vinyl chloride	75-01-4	0.27	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Barium	7440-39-3	1.2	21 mg/l TCLP
		Beryllium	7440-41-7	0.82	NA
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)	57-12-5	0.86	NA
		Fluoride	16964-48-8	35	NA
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
		Sulfide	8496-25-8	14	NA
		Thallium	7440-28-0	1.4	NA

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		Vanadium	7440-62-2	4.3	NA
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K005	Wastewater treatment sludge from the production of chrome green pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP

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	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
K007	Wastewater treatment sludge from the production of iron blue pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K008	Oven residue from the production of chrome oxide green pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	47-12-5	1.2	590
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23

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		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K015	Still bottoms from the distillation of benzyl chloride.	Anthracene	120-12-7	0.059	3.4
		Benzal chloride	98-87-3	0.055	6.0
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluroanthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Phenanthrene	85-01-8	0.059	5.6
		Toluene	108-88-3	0.080	10
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		1,2,3-Trichloropropane	96-18-4	0.85	30
K018	Heavy ends from the fractionation column in ethyl chloride production.	Chloroethane	75-00-3	0.27	6.0
		Chloromethane	74-87-3	0.19	NA
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Hexachlorobenzene	118-74-1	0.055	10

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		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		p-Dichlorobenzene	106-46-7	0.090	NA
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Fluorene	86-73-7	0.059	NA
		Hexachloroethane	67-72-1	0.055	30
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	NA
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP

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K022	Distillation bottom tars from the production of phenol/acetone from cumene.	Toluene	108-88-3	0.080	10
		Acetophenone	96-86-2	0.010	9.7
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		Phenol	108-95-2	0.039	6.2
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	NA	NA	LLEXT fb SSTRP fb CARBN; or CMBST	CMBST
K026	Stripping still tails from the production of methyl ethyl pyridines.	NA	NA	CMBST	CMBST
K027	Centrifuge and distillation residues from toluene diisocyanate production.	NA	NA	CARBN; or CMBST	CMBST
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	1,1-Dichloroethane	75-34-3	0.059	6.0
		trans-1,2-Dichloroethylene	156-60-5	0.054	30
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Cadmium	7440-43-9	0.69	NA
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Chloroform	67-66-3	0.046	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0
K030	Column bodies or heavy ends from the combined production of trichloroethylene and perchloroethylene.	o-Dichlorobenzene	95-50-1	0.088	NA
		p-Dichlorobenzene	106-46-7	0.090	NA
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Hexachloropropylene	1888-71-7	NA	30
		Pentachlorobenzene	608-93-5	NA	10
		Pentachloroethane	76-01-7	NA	6.0
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
K031	Byproduct salts generated in the production of MSMA and cacodylic acid.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K032	Wastewater treatment sludge from the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	Hexachlorocylopentadiene	77-47-4	0.057	2.4
K035	Wastewater treatment sludges generated in the production of creosote.	Acenaphthene	83-32-9	NA	3.4
		Anthracene	120-12-7	NA	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Dibenz(a,h)anthracene	53-70-3	NA	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Fluorene	86-73-7	NA	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	NA	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Pyrene	129-00-0	0.067	8.2
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
K037	Wastewater treatment sludges from the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
		Toluene	108-88-3	0.080	10
K038	Wastewater from the washing and stripping of phorate production.	Phorate	298-02-2	0.021	4.6
K039	Filter cake from the filtration of diethylphosphorodithioc acid in the production of phorate.	NA	NA	CARBN; or CMBST	CMBST
K040	Wastewater treatment sludge from the production of phorate.	Phorate	298-02-2	0.021	4.6
K041	Wastewater treatment sludge from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	2,4-Dichlorophenol	120-83-2	0.044	14
		2,6-Dichlorophenol	187-65-0	0.044	14
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		Pentachlorophenol	87-86-5	0.089	7.4
		Tetrachloroethylene	127-18-4	0.056	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Penta-chlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Penta-chlorodibenzofurans)	NA	0.000035	0.001
		TCDDs (All tetra-chlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetra- chlorodibenzofurans)	NA	0.000063	0.001
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	NA	NA	DEACT	DEACT
K045	Spent carbon from the treatment of wastewater containing explosives.	NA	NA	DEACT	DEACT
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Lead	7439-92-1	0.69	0.75 mg/l TCLP
K047	Pink/red water from TNT operations.	NA	NA	DEACT	DEACT
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Toluene	108-88-33	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11.0 mg/l TCLP
K049	Slop oil emulsion solids from the petroleum refining industry.	Anthracene	120-12-7	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2)-Ethylhexyl phthalate	117-81-7	0.28	28
		Carbon disulfide	75-15-0	3.8	NA
		Chrysene	2218-01-9	0.059	3.4
		2,4-Dimethylphenol	105-67-9	0.036	NA
		Ethylbenzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11.0 mg/l TCLP
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Benzo(a)pyrene	50-32-8	0.061	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11.0 mg/l TCLP
K051	API separator sludge from the petroleum refining industry.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	2218-01-9	0.059	3.4
		Di-n-butyl phthalate	105-67-9	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11.0 mg/l TCLP
K052	Tank bottoms (leaded) from the petroleum refining industry.	Benzene	71-43-2	0.14	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		Benzo(a)pyrene	50-32-8	0.061	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		2,4-Dimethylphenol	105-67-9	0.036	NA
		Ethylbenzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Toluene	108-88-3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11.0 mg/l TCLP
K060	Ammonia still lime sludge from coking operations.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Antimony	7440-36-0	NA	1.15 mg/l TCLP
		Arsenic	7440-38-2	NA	5.0 mg/l TCLP
		Barium	7440-39-3	NA	21 mg/l TCLP
		Beryllium	7440-41-7	NA	1.22 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	NA	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Selenium	7782-49-2	NA	5.7 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
		Thallium	7440-28-0	NA	0.20 mg/l TCLP
		Zinc	7440-66-6	NA	4.3 mg/l TCLP
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (standard industrial codes 331 and 332).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	NA
K069	Emission control dust/sludge from secondary lead smelting - calcium sulfate (low lead) subcategory.	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
	Emission control dust/sludge from secondary lead smelting - noncalcium sulfate (high lead) subcategory.	NA	NA	NA	RLEAD
K071	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.) Nonwastewaters that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.) Nonwastewaters that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All K071 wastewaters.	Mercury	7439-97-6	0.15	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K083	Distillation bottoms from aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		Cyclohexanone	108-94-1	0.36	NA
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenlyamine)	86-30-6	0.92	13
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		m-Dichlorobenzene	541-73-1	0.036	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Tricholorobenzene	120-82-1	0.055	19
K086	Solvent wastes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	Acetone	67-64-1	0.28	160
		Acetophenone	96-86-2	0.010	9.7
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		n-Butyl alcohol	71-36-3	5.6	2.6
		Butylbenzyl phthalate	85-68-7	0.017	28
		Cyclohexanone	108-94-1	0.36	NA
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Diethyl phthalate	84-66-2	0.20	28
		Dimethyl phthalate	131-11-3	0.047	28
		Di-n-butyl phthalate	84-74-2	0.057	28
		Di-n-octyl phthalate	117-84-0	0.017	28
		Ethyl acetate	141-78-6	0.34	33
		Ethylbenzene	100-41-4	0.057	10
		Methanol	67-56-1	5.6	NA
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Methylene chloride	75-09-2	0.089	30
		Naphthalene	91-20-3	0.059	5.6
		Nitrobenzene	98-95-3	0.068	14

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Toluene	108-88-3	0.080	10
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K087	Decanter tank tar sludge from coking operations.	Acenaphthylene	208-96-8	0.059	3.4
		Benzene	71-43-2	0.14	10
		Chrysene	218-01-9	0.059	3.4
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K088	Spent potliners from primary aluminum reduction.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene	205-99-2	0.11	6.8
		Benzo(k)fluoranthene	207-08-09	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3-cd)-pyrene	193-39-5	0.0055	3.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	26.1
		Barium	7440-39-3	1.2	21 mg/l TCLP
		Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
		Cyanide (Total)[7]	57-12-5	1.2	590
		Cyanide (Amenable)[7]	57-12-5	0.86	30
		Fluoride	16984-48-8	35	NA
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	Hexachloroethane	67-72-1	0.055	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	m-Dichlorobenzene	541-73-1	0.036	6.0
		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4
K098	Untreated process wastewater from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K099	Untreated wastewater from the production of 2,4-D.	2,4-Dichlorophenoxyacetic acid	94-75-7	0.72	10
		HxCDDs (All Hexa-chlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All hexa-chlorodibenzofurans)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		PeCDDs (All penta-chlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (all Pentachlorodi-benzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachloro-dibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachloro- dibenzofurans)	NA	0.000063	0.001
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Cadmium	7440-43-9	0.069	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitroaniline	88-74-4	0.27	14
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA
		Mercury	7439-97-6	0.15	NA
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitrophenol	88-75-5	0.028	13
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA
		Mercury	7439-97-6	0.15	NA
K103	Process residues from aniline extraction from the production of aniline.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
K104	Combined wastewater streams generated from nitrobenzene/aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		2-Chlorophenol	95-57-8	0.044	5.7
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Phenol	108-95-2	0.039	6.2
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
K106	K106 (Wastewater treatment sludge from the mercury cell process in chlorine production.) Nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	K106 (wastewater treatment sludge from the mercury cell process in chlorine production.) Nonwastewaters that contain less than 260 mg/kg total mercury that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP

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Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
	Other K106 nonwastewaters that contain less than 260 mg/kg total mercury and are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All K106 wastewaters.	Mercury	7439-97-6	0.15	NA
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K109	Spent filter cartridges from product purification from the production of 1,1-dimethyhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.	2,4-Dinitrotoluene	121-14-2	0.32	140
		2,6-Dinitrotoluene	606-20-2	0.55	28
K112	Reaction byproduct water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; or CMBST	CMBST
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; or CMBST	CMBST

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Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nickel	7440-02-0	3.98	11 mg/l TCLP
		NA	NA	CARBN; or CMBST	CMBST
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	NA	NA	CARBN; or CMBST	CMBST
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethane.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-63-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K118	Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	NA	Na	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST

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Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke or the recovery of coke byproducts produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-2-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke byproducts produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke byproducts produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke byproducts produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4

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		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
K145	Residues from naphthalene collection and recovery operations from the recovery of coke byproducts produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Naphthalene	91-20-3	0.059	5.6
K147	Tar storage tank residues from coal tar refining.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K148	Residues from coal tar distillation, including, but not limited to, still bottoms.	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8

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		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillations of benzyl chloride.)	Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Toluene	108-88-3	0.080	10
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Benzene	71-43-2	0.14	10
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	Acetonitrile	75-05-8	5.6	1.8
		Acetophenone	98-86-2	0.010	9.7
		Aniline	62-53-3	0.81	14
		Benomyl[10]	17804-35-2	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Benzene	71-43-2	0.14	10
		Carbaryl[10]	63-25-21	0.006; or CMBST, CHOXD, BIODG, or CARBN	0.14; or CMBST

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Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Carbenzadim[10]	10605-21-7	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Carbofuran[10]	1563-66-2	0.006; or CMBST, CHOXD, BIODG, or CARBN	0.14; or CMBST
		Carbosulfan[10]	55285-14-8	0.028; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Methomyl[10]	16752-77-5	0.028; or CMBST, CHOXD, BIODG, or CARBN	0.14; or CMBST
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyridine	110-86-1	0.014	16
		Toluene	108-88-3	0.080	10
		Triethylamine	121-44-8	0.081; or CMBST, CHOXD, BIODG, or CARBN	1.5; or CMBST
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		Methomyl[10]	16752-77-5	0.028; or CMBST, CHOXD, BIODG, or CARBN	0.14; or CMBST
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Pyridine	110-86-1	0.014	16
		Triethylamine	121-44-8	0.081; or CMBST, CHOXD, BIODG, or CARBN	1.5; or CMBST
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	Benzene	71-43-2	0.14	10
		Carbenzadim[10]	10605-21-7	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Carbofuran[10]	1563-66-2	0.006; or CMBST, CHOXD, BIODG, or CARBN	0.14; or CMBST
		Carbosulfan[10]	55285-14-8	0.028; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Chloroform	67-66-3	0.046	6.0
		Methylene chloride	75-09-2	0.089	30
		Phenol	108-95-2	0.039	6.2
K159	Organics from the treatment of thiocarbamate wastes.	Benzene	71-43-2	0.14	10
		Butylate[10]	2008-41-5	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		EPTC (Eptam[10])	759-94-4	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Molinate[10]	2212-67-1	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Pebulate[10]	1114-71-2	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
		Vernolate[10]	1929-77-7	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
K161	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings, from the production of dithiocarbamate acids and their salts.	Antimony	7440-36-0	1.9	1.15 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
		Dithiocarbamates (total)[10]	NA	0.028; or CMBST, CHOXD, BIODG, or CARBN	28; or CMBST
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
K169	Crude oil tank sediment from petroleum refining operations.	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Ethyl benzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	81-05-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene (methyl benzene)	108-88-3	0.080	10
		Xylene(s)(Total)	1330-20-7	0.32	30
K170	Clarified slurry oil sediment from petroleum refining operations.	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Ethyl benzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2] No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Phenanthrene	81-05-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene (Methyl benzene)	108-88-3	0.080	10
		Xylene(s)(Total)	1330-20-7	0.32	30
K171	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10
		Chrysene	218-01-9	0.059	3.4
		Ethyl benzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	81-05-8	0.059	5.6
		Pyrene	129-00-0	0.67	8.2
		Toluene (Methyl benzene)	108-88-3	0.080	10
		Xylene(s)(Total)	1330-20-7	0.32	30
		Arsenic	7740-38-2	1.4	5 mg/l TCLP
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Vanadium	7440-62-2	4.3	1.6 mg/l TCLP
		Reactive sulfides	NA	DEACT	DEACT
K172	Spent hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	Benzene	71-43-2	0.14	10
		Ethyl benzene	100-41-4	0.57	10
		Toluene (Methyl benzene)	108-88-3	0.080	10
		Xylene(s)(Total)	1330-20-7	0.32	30
		Antimony	7740-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7740-38-2	1.4	5 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
		Vanadium	7440-62-2	4.3	1.6 mg/l TCLP
		Reactive sulfides	NA	DEACT	DEACT
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer.	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1,2,3,4,6,7,8- Heptacholordibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1,2,3,4,7,8,9- Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	34465-46-8	0.000063 or CMBST[11]	0.001 or CMBST[11]
		HxCDFs (All Hexachlorodibenzofurans)	55684-94-1	0.000063 or CMBST[11]	0.001 or CMBST[11]
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063 or CMBST[11]	0.005 or CMBST[11]
		1,2,3,4,6,7,8,9- Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063 or CMBST[11]	0.005 or CMBST[11]
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	36088-22-9	0.000063 or CMBST[11]	0.001 or CMBST[11]
		PeCDFs (All Pentachlorodibenzofurans)	30402-15-4	0.000035 or CMBST[11]	0.001 or CMBST[11]
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	41903-57-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		TCDFs (All Tetrachlorodibenzofurans)	55722-27-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K175	Wastewater treatment sludge from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	Mercury[12]	7438-97-6	NA	0.025 mg/l TCLP
		pH[12]	NA	NA	pH ≤ 6.0
	All K175 wastewaters.	Mercury	7438-97-6	0.15	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (for example, antimony metal or crude antimony oxide).	Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (for example, antimony metal or crude antimony oxide).	Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process.	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-39-4	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1,2,3,4,6,7,8- Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1,2,3,4,6,7,9- Heptachlorodibenzofuran (1,2,3,4,6,7,9-HpCDF)	55673-89-7	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	34465-46-8	0.000063 or CMBST[11]	0.001 or CMBST[11]
		HxCDFs (All Hexachlorodibenzofurans)	55684-94-1	0.000063 or CMBST[11]	0.001 or CMBST[11]
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063 or CMBST[11]	0.005 or CMBST[11]
		1,2,3,4,6,7,8,9- Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063 or CMBST[11]	0.005 or CMBST[11]
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	36088-22-9	0.000063 or CMBST[11]	0.001 or CMBST[11]

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		PeCDFs (All Pentachlorodibenzofurans)	30402-15-4	0.000035 or CMBST[11]	0.001 or CMBST[11]
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	41903-57-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		TCDFs (All Tetrachlorodibenzofurans)	55722-27-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Thallium	7440-28-0	1.4	0.20 mg/l TCLP
K181	Nonwastewaters from the production of dyes or pigments, or both, (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in subsection 3 of section 33-24-02-17 that are equal to or greater than the corresponding subsection 3 of section 33-24-02-17 levels, as determined on a calendar year basis.	Aniline	62-53-3	0.81	14
		o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
		4-Chloroaniline	106-47-8	0.46	16
		p-Cresidine	120-71-8	0.010	0.66
		2,4-Dimethylaniline (2,4-xylidine)	95-68-1	0.010	0.66
		1,2-Phenylenediamine	95-54-5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN
		1,3-Phenylenediamine	108-45-2	0.010	0.66
P001	Warfarin, and salts, when present at concentrations greater than 0.3 percent.	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P002	1-Acetyl-2-thiourea	1-Acetyl-2-thiourea	591-08-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P003	Acrolein	Acrolein	107-02-8	0.29	CMBST
P004	Aldrin	Aldrin	309-00-2	0.021	0.066
P005	Allyl alcohol	Allyl alcohol	107-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P006	Aluminum phosphide	Aluminum phosphide	20859-73-8	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
P007	5-Aminomethyl 3-isoxazolol	5-Aminomethyl 3-isoxazolol	2763-96-4	(WETOX or CHOXD) fb CARBN: or CMBST	CMBST
P008	4-Aminopyridine	4-Aminopyridine	504-24-5	(WETOX or CHOXD) fb CARBN: or CMBST	CMBST
P009	Ammonium picrate	Ammomium picrate	131-74-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P010	Arsenic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P011	Arsenic pentoxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P012	Arsenic trioxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P013	Barium cyanide	Barium	7440-39-3	NA	21 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P014	Thiophenol (Benzene thiol)	Thiophenol (Benzene thiol)	108-98-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P015	Beryllium dust	Beryllium	7440-41-7	RMETL; or RTHRM	RMETL; or RTHRM
P016	Dichloromethyl ether (Bis(chloromethyl)ether)	Dichloromethyl ether	542-88-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P017	Bromoacetone	Bromoacetone	598-31-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P018	Brucine	Brucine	357-57-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
P021	Calcium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P022	Carbon disulfide	Carbon disulfide	75-15-0	3.8	CMBST
		Carbon disulfide; alternate[6] standard for nonwastewaters only	75-15-0	NA	4.8 mg/l TCLP
P023	Chloroacetaldehyde	Chloroacetaldehyde	107-20-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P024	p-Chloroaniline	p-Chloroaniline	106-47-8	0.46	16

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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P026	1-(o-Cholorphenyl)thiourea	1-(o-Cholorphenyl)thiourea	5344-82-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P027	3-Chloropropionitrile	3-Chloropropionitrile	542-76-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P028	Benzyl chloride	Benzyl chloride	100-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P029	Copper cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P030	Cyanides (soluble salts and complexes)	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P031	Cyanogen	Cyanogen	460-19-5	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P033	Cyanogen chloride	Cyanogen chloride	506-77-4	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P034	2-Cyclohexly-4,6-dinitrophenol	2-Cyclohexly-4,6-dinitrophenol	131-89-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P036	Dichlorophenylarsine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P037	Dieldrin	Dieldrin	60-57-1	0.017	0.13
P038	Diethylarine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P039	Disulfoton	Disulfoton	298-04-4	0.017	6.2
P040	0,0-Diethyl O-pyrazinyl phosphorothioate	0,0-Diethyl O-pyrazinyl phosphorothioate	297-97-2	CARBN; or CMBST	CMBST
P041	Diethyl-p-nitrophenyl phosphate	Diethyl-p-nitrophenyl phosphate	311-45-5	CARBN; or CMBST	CMBST
P042	Epinephrine	Epinephrine	51-43-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P043	Diisopropylfluorophosphate (DFP)	Diisopropylfluorophosphate (DFP)	55-91-4	CARBN; or CMBST	CMBST
P044	Dimethoate	Dimethoate	60-51-5	CARBN; or CMBST	CMBST
P045	Thiofanox	Thiofanox	39196-18-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P046	Alpha, alpha-Dimethyl-phenethylamine	alpha, alpha-Dimethyl-phenethylamine	122-09-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
P047	4,6-Dinitro-o-cresol	4,6-Dinitro-o-cresol	543-52-1	0.28	160
	4,6-Dinitro-o-cresol salts	NA	NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P048	2,4-Dinitrophenol	2,4-Dinitrophenol	51-28-5	0.12	160
P049	Dithiobiuret	Dithiobiuret	541-53-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P050	Endosulfan	Endosulfan I	939-98-8	0.023	0.066
		Endosulfan II	33213-6-5	0.029	0.13
		Endosulfan sulfate	1031-07-8	0.029	0.13
P051	Endrin	Endrin	72-20-8	0.0028	0.13
		Endrin aldehyde	7421-93-4	0.025	0.13
P054	Aziridine	Aziridine	151-56-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P056	Fluorine	Fluoride (measured in wastewaters only)	16964-48-8	35	ADGAS fb NEUTR
P057	Fluoroacetamide	Fluoroacetamide	640-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P058	Fluoroacetic acid, sodium salt	Fluoroacetic acid, sodium salt	62-74-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P059	Heptachlor	Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	10234-57-3	0.016	0.066
P060	Isodrin	Isodrin	465-73-6	0.021	0.066
P062	Hexaethyl tetraphosphate	Hexaethyl tetraphosphate	757-58-4	CARBN; or CMBST	CMBST
P063	Hydrogen cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P064	Isocyanic acid, ethyl ester	Isocyanic acid, ethyl ester	624-83-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P065	Mercury fulminate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
	Mercury fulminate nonwastewaters that are either incinerator residues or are residues from RMERC; and contain greater than or equal to 260 mg/kg total mercury.	Mercury	7339-97-6	NA	RMERC
	Mercury fulminate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Mercury fulminate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All mercury fulminate wastewaters.	Mercury	7439-97-6	0.15	NA
P066	Methomyl	Methomyl	16752-77-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P067	2-Methyl-aziridine	2-Methyl-aziridine	75-55-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P068	Methyl hydrazine	Methyl hydrazine	60-34-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED, OR CMBST
P069	2-Methyllactonitrile	2-Methyllactonitrile	75-86-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P070	Aldicarb	Aldicarb	116-06-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P071	Methyl parathion	Methyl parathion	298-00-0	0.014	4.6
P072	1-Naphthyl-2-thiourea	1-Naphthyl-2-thiourea	86-88-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P073	Nickel carbonyl	Nickel	7440-02-0	3.98	11.0 mg/l TCLP
P074	Nickel-cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Nickel	7440-02-0	3.98	11.0 mg/l TCLP
P075	Nicotine and salts	Nicotine and salts	54-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P076	Nitric oxide	Nitric oxide	10102-43-9	ADGAS	ADGAS
P077	p-Nitroaniline	p-Nitroaniline	100-01-6	0.028	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
P078	Nitrogen dioxide	Nitrogen dioxide	10102-44-0	ADGAS	ADGAS
P081	Nitroglycerin	Nitroglycerin	55-63-0	CHOXD; CHRED; CARBN; BIODG or CMBST	CHOXD; CHRED; or CMBST
P082	N-Nitrosodimethylamine	N-Nitrosodimethylamine	62-75-9	0.40	2.3
P084	N-Nitrosomethylvinylamine	N-Nitrosomethylvinylamine	4549-40-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P085	Octamethylpyrophosphoramide	Octamethylpyrophosphoramide	152-16-9	CARBN; or CMBST	CMBST
P087	Osmium tetroxide	Osmium tetroxide	20816-12-0	RMETL; or RTHRM	RMETL; or RTHRM
P088	Endothall	Endothall	145-73-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P089	Parathion	Parathion	56-38-2	0.014	4.6
P092	Phenyl mercuric acetate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC; or RMERC
	Phenyl mercuric acetate nonwastewaters that are either incinerator residues or are residues from RMERC; and still contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	Phenyl mercuric acetate nonwastewaters that are residues from RMERC and contain less than 160 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Phenyl mercuric acetate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All phenyl mercuric acetate wastewaters.	Mercury	7439-97-6	0.15	NA
P093	Phenylthiourea	Phenylthiourea	103-85-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P094	Phorate	Phorate	298-02-2	0.021	4.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
P095	Phosgene	Phosgene	75-44-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P096	Phosphine	Phosphine	7803-51-2	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P097	Famphur	Famphur	52-85-7	0.017	15
P098	Postassium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P099	Potassium silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
P101	Ethyl cyanide (Propanenitrile)	Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
P102	Propargyl alcohol	Propargyl alcohol	107-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P103	Selenourea	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
P104	Silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
P105	Sodium azide	Sodium azide	26628-22-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P106	Sodium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P108	Strychnine and salts	Strychnine and salts	57-24-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P109	Tetraethyldithiopyrophosphate	Tetraethyl- dithiopyrophosphate	3689-24-5	CARBN; or CMBST	CMBST
P110	Tetraethyl lead	Lead	7439-92-1	0.69	0.75 mg/l TCLP
P111	Tetraethylpyrophosphate	Tetraethylpyrophosphate	107-49-3	CARBN; or CMBST	CMBST
P112	Tetranitromethane	Tetranitromethane	509-14-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P113	Thallic oxide	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
P114	Thallium selenite	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
P115	Thallium (I) sulfate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
P116	Thiosemicarbazide	Thiosemicarbazide	79-19-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P118	Trichloromethanethiol	Trichloromethanethiol	75-70-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P119	Ammonium vanadate	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P120	Vanadium pentoxide	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P121	Zinc cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P122	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10 percent.	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P123	Toxaphene	Toxaphene	8001-35-2	0.0095	2.6
P127	Carbofuran[10]	Carbofuran	1563-66-2	0.006; or CMBST, CHOXD, BIODG, or CARBN	0.14; or CMBST
P128	Mexacarbate[10]	Mexacarbate	315-18-4	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P185	Tirpate[10]	Tirpate	26419-73-8	0.056; or CMBST, CHOXD, BIODG, or CARBN	0.28; or CMBST
P188	Physostigimine salicylate[10]	Physostigmine salicylate	57-64-7	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P189	Carbosulfan[10]	Carbosulfan	55285-14-8	0.028; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P190	Metolcarb[10]	Metolcarb	1129-41-5	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P191	Dimetilan[10]	Dimetilan	644-64-4	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P192	Isolan[10]	Isolan	119-38-0	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
P194	Oxamyl[10]	Oxamyl	23135-22-0	0.056; or CMBST, CHOXD, BIODG, or CARBN	0.28; or CMBST
P196	Manganese dimethyldithio-carbamate[10]	Dithiocarbamates (total)	NA	0.028; or CMBST, CHOXD, BIODG, or CARBN	28; or CMBST
P197	Formparanate[10]	Formparanate	17702-57-7	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P198	Formetanate hydrochloride[10]	Formetanate hydrochloride	23422-53-9	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P199	Methiocarb[10]	Methiocarb	2032-65-7	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P201	Promecarb[10]	Promecarb	2631-37-0	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P202	m-Cumenyl methylcarbamate[10]	m-Cumenyl methylcarbamate	64-00-6	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P203	Aldicarb sulfone[10]	Aldicarb sulfone	1646-88-4	0.056; or CMBST, CHOXD, BIODG, or CARBN	0.28; or CMBST
P204	Physostigmine[10]	Physostigmine	57-47-6	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
P205	Ziram[10]	Dithiocarbamates (total)	NA	0.028; or CMBST, CHOXD, BIODG, or CARBN	28; or CMBST
U001	Acetaldehyde	Acetaldehyde	75-07-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U002	Acetone	Acetone	67-64-1	0.28	160
U003	Acetonitrile	Acetonitrile	75-05-8	5.6	CMBST
		Acetonitrile; alternate[6] standard for nonwastewaters only	75-05-8	NA	38
U004	Acetophenone	Acetophenone	98-86-2	0.010	9.7
U005	2-Acetylaminofluorene	2-Acetylaminofluorene	53-96-3	0.059	140
U006	Acetyl chloride	Acetyl Chloride	75-36-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U007	Acrylamide	Acrylamide	79-06-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

		Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Common Name	CAS[2]No.	Concentration[3] mg/l; or Technology Code[4]	Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U008	Acrylic acid	Acrylic acid	79-10-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U009	Acrylonitrile	Acrylonitrile	107-13-1	0.24	84
U010	Mitomycin C	Mitomycin C	50-07-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U011	Amitrole	Amitrole	61-82-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U012	Aniline	Aniline	62-53-3	0.81	14
U014	Auramine	Auramine	492-80-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U015	Azaserine	Azaserine	115-02-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U016	Benz(c)acridine	Benz(c)acridine	225-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U017	Benzal chloride	Benzal chloride	98-87-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U018	Benz(a)anthracene	Benz(a)anthracene	56-55-3	0.059	3.4
U019	Benzene	Benzene	71-43-2	0.14	10
U020	Benzenesulfonyl chloride	Benzenesulfonyl chloride	98-09-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U021	Benzidine	Benzidine	92-87-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U022	Benzo(a)pyrene	Benzo(a)pyrene	50-32-8	0.061	3.4
U023	Benzotrichloride	Benzotrichloride	98-07-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U024	bis(2-Chloroethoxy)methane	bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
U025	bis(2-Chloroethyl)ether	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
U026	Chlornaphazine	Chlornaphazine	494-03-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U027	bis(2-Chloroisopropyl)ether	bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
U028	bis(2-Ethylhexyl)phthalate	bis(2-Ethylhexyl)phthalate	117-81-7	0.28	28
U029	Methyl bromide (Bromomethane)	Methyl bromide (Bromomethane)	74-89-9	0.11	15

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U030	4-Bromophenyl phenyl ether	4-Bromophenyl phenyl ether	101-55-3	0.055	15
U031	n-Butyl alcohol	n-Butyl alcohol	71-36-3	5.6	2.6
U032	Calcium chromate	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
U033	Carbon oxyfluoride	Carbon oxyfluoride	353-50-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U034	Trichloroacetaldehyde (Chloral)	Trichloroacetaldehyde (Chloral)	75-87-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U035	Chlorambucil	Chlorambucil	305-03-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U036	Chlordane	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
U037	Chlorobenzene	Chlorobenzene	108-90-7	0.057	6.0
U038	Chlorobenzilate	Chlorobenzilate	510-15-6	0.10	CMBST
U039	p-Chloro-m-cresol	p-Chloro-m-cresol	59-50-7	0.018	14
U041	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106-89-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U042	2-Chloroethyl vinyl ether	2-Chloroethyl vinyl ether	110-75-8	0.062	CMBST
U043	Vinyl chloride	Vinyl chloride	75-01-4	0.27	6.0
U044	Chloroform	Chloroform	67-66-3	0.046	6.0
U045	Chloromethane (Methyl chloride)	Chloromethane (Methyl chloride)	74-87-3	0.19	30
U046	Chloromethyl methyl ether	Chloromethyl methyl ether	107-30-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U047	2-Chloronaphthalene	2-Chloronaphthalene	91-58-7	0.055	5.6
U048	2-Chlorophenol	2-Chlorophenol	95-57-8	0.044	5.7
U049	4-Chloro-o-toluidine hydrochloride	4-Chloro-o-toluidine hydrochloride	3165-93-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U050	Chrysene	Chrysene	218-01-9	0.059	3.4
U051	Creosote	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
U052	Cresols (Cresylic acid)	o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88	11.2
U053	Crotonaldehyde	Crotonaldehyde	4170-30-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U055	Cumene	Cumene	98-82-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U056	Cyclohexane	Cyclohexane	110-82-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U057	Cyclohexanone	Cyclohexanone	108-94-1	0.36	CMBST
		Cyclohexanone; alternate[6] standard for nonwastewaters only	108-94-1	NA	0.75 mg/l TCLP
U058	Cyclophosphamide	Cyclophosphamide	50-18-0	CARBN; or CMBST	CMBST
U059	Daunomycin	Daunomycin	20830-81-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U060	DDD	o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
U061	DDT	o,p'-DDT	789-02-6	0.0039	0.087
		p,p'-DDT	50-29-3	0.0039	0.087
		o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
		o,p'-DDE	3424-82-6	0.031	0.087

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		p,p'-DDE	72-55-9	0.031	0.087
U062	Diallate	Diallate	2303-16-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U063	Dibenz(a,h)anthracene	Dibenz(a,h)anthracene	53-70-3	0.055	8.2
U064	Dibenz(a,i)pyrene	Dibenz(a,i)pyrene	189-55-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U066	1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
U067	Ethylene dibromide (1,2-Dibromoethane)	Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
U068	Dibromomethane	Dibromomethane	74-95-3	0.11	15
U069	Di-n-butyl phthalate	Di-n-butyl phthalate	84-74-2	0.057	28
U070	o-Dichlorobenzene	o-Dichlorobenzene	95-50-1	0.088	6.0
U071	m-Dichlorobenzene	m-Dichlorobenzene	541-73-1	0.036	6.0
U072	p-Dichlorobenzene	p-Dichlorobenzene	106-46-7	0.090	6.0
U073	3,3'-Dichlorobenzidine	3,3'-Dichlorobenzidine	91-94-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U074	1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1476-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		trans-1,4-Dichloro-2-butene	764-41-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U075	Dichlorodifluoromethane	Dichlorodifluoromethane	75-71-8	0.23	7.2
U076	1,1-Dichloroethane	1,1-Dichloroethane	75-34-3	0.059	6.0
U077	1,2-Dichloroethane	1,2-Dichloroethane	107-06-2	0.21	6.0
U078	1,1-Dichloroethylene	1,1-Dichloroethylene	75-35-4	0.025	6.0
U079	1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156-60-5	0.054	30
U080	Methylene chloride	Methylene chloride	75-09-2	0.089	30
U081	2,4-Dichlorophenol	2,4-Dichlorophenol	120-83-2	0.044	14
U082	2,6-Dichlorophenol	2,6-Dichlorophenol	87-65-0	0.044	14
U083	1,2-Dichloropropane	1,2-Dichloropropane	78-87-5	0.85	18
U084	1,3-Dichloropropylene	cis-1,3-Dichloropropylene	10061-01-5	0.036	18

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
U085	1,2:3,4-Diepoxybutane	1,2:3,4-Diepoxybutane	1464-53-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U086	N,N'-Diethylhydrazine	N,N'-Diethylhydrazine	1615-80-1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U087	O,O-Diethyl S-methyldithiophosphate	O,O-Diethyl S-methyldithiophosphate	3288-58-2	CARBN; CMBST	CMBST
U088	Diethyl phthalate	Diethyl phthalate	84-66-2	0.20	28
U089	Diethyl stilbestrol	Diethyl stilbestrol	56-53-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U090	Dihydrosafrole	Dihydrosafrole	94-58-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U091	3,3'-Dimethoxybenzidine	3,3'-Dimethoxybenzidine	119-90-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U092	Dimethylamine	Dimethylamine	124-40-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U093	p-Dimethylaminoazobenzene	p-Dimethylaminoazobenzene	60-11-7	0.13	CMBST
U094	7,12-Dimethylibenz(a)anthracene	7,12-Dimethylbenz(a) anthracene	57-97-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U095	3,3'-Dimethylbenzidine	3,3'-Dimethylbenzidine	119-93-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U096	alpha, alpha-Dimethyl benzyl hydroperoxide	alpha, alpha-Dimethyl benzyl hydroperoxide	80-15-9	CHOXD; CHRED; CARBN; BIODG; OR CMBST	CHOXD; CHRED: or CMBST
U097	Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U098	1,1-Dimethylhydrazine	1,1-Dimethylhydrazine	57-14-7	CHOXD; CHRED; CARBN; BIODG; OR CMBST	CHOXD; CHRED; or CMBST
U099	1,2-Dimethylhydrazine	1,2-Dimethylhydrazine	540-73-8	CHOXD; CHRED; CARBN; BIODG; OR CMBST	CHOXD; CHRED; or CMBST
U101	2,4-Dimethylphenol	2,4-Dimethylphenol	105-67-9	0.036	14
U102	Dimethyl phthalate	Dimethyl phthalate	131-11-3	0.047	28
U103	Dimethyl sulfate	Dimethyl sulfate	77-78-1	CHOXD; CHRED; CARBN; BIODG; OR CMBST	CHOXD; CHRED; or CMBST
U105	2,4-Dinitrotoluene	2,4-Dinitrotoluene	121-14-2	0.32	140

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U106	2,6-Dinitrotoluene	2,6-Dinitrotoluene	606-20-2	0.55	28
U107	Di-n-octyl phthalate	Di-n-octyl phthalate	117-84-0	0.017	28
U108	1,4-Dioxane	1,4-Dioxane	123-91-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		1,4-Dioxane; alternate[6] standard for nonwastewaters only	123-91-1	12.0	170
U109	1,2-Diphenylhydrazine	1,2-Diphenylhydrazine	122-66-7	CHOXD; CHRED; CARBN; BIODG; OR CMBST	CHOXD; CHRED; or CMBST
		1,2-Diphenylhydrazine; alternate[6] standard for wastewaters only	122-66-7	0.087	NA
U110	Dipropylamine	Dipropylamine	142-84-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U111	Di-n-propylnitrosamine	Di-n-propylnitrosamine	621-64-7	0.40	14
U112	Ethyl acetate	Ethyl acetate	141-78-6	0.34	33
U113	Ethyl acrylate	Ethyl acrylate	140-88-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U114	Ethylenebisdithiocarbamic acid salts and esters	Ethylenebisdithiocarbamic acid	111-54-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U115	Ethylene oxide	Ethylene oxide	75-21-8	(WETOX or CHOXD) fb CARBN; or CMBST	CHOXD; or CMBST
		Ethylene oxide; alternate[6] standard for wastewaters only	75-21-8	0.12	NA
U116	Ethylene thiourea	Ethylene thiourea	96-45-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U117	Ethyl ether	Ethyl ether	60-29-7	0.12	160
U118	Ethyl methacrylate	Ethyl methacrylate	97-63-2	0.14	160
U119	Ethyl methane sulfonate	Ethyl methane sulfonate	62-50-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U120	Fluoranthene	Fluoranthene	206-44-0	0.068	3.4
U121	Trichloromonofluoromethane	Trichloromonofluoromethane	75-69-4	0.020	30
U122	Formaldehyde	Formaldehyde	50-00-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U123	Formic acid	Formic acid	64-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U124	Furan	Furan	110-00-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U125	Furfural	Furfural	98-01-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U126	Glycidylaldehyde	Glycidylaldehyde	765-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U127	Hexachlorobenzene	Hexachlorobenzene	118-74-1	0.055	10
U128	Hexachlorobutadiene	Hexachlorobutadiene	87-68-3	0.055	5.6
U129	Lindane	alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.066
		gamma-BHC (Lindane)	58-89-9	0.0017	0.066
U130	Hexachlorocyclopentadiene	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
U131	Hexachloroethane	Hexachloroethane	67-72-1	0.055	30
U132	Hexachlorophene	Hexachlorophene	70-30-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U133	Hydrazine	Hydrazine	302-01-2	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U134	Hydrogen fluoride	Fluoride (measured in wastewaters only)	7664-39-3	35	ADGAS fb NEUTR; or NEUTR
U135	Hydrogen Sulfide	Hydrogen Sulfide	7783-06-4	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U136	Cacodylic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
U137	Indeno(1,2,3-cd)pyrene	Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
U138	Iodomethane	Iodomethane	74-88-4	0.19	65
U140	Isobutyl alcohol	Isobutyl alcohol	78-83-1	5.6	170
U141	Isosafrole	Isosafrole	120-58-1	0.081	2.6
U142	Kepone	Kepone	143-50-8	0.0011	0.13

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U143	Lasiocarpine	Lasiocarpine	303-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U144	Lead acetate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U145	Lead phosphate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U146	Lead subacetate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U147	Maleic anhydride	Maleic anhydride	108-31-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U148	Maleic hydrazide	Maleic hydrazide	123-33-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U149	Malononitrile	Malononitrile	109-77-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U150	Melphalan	Melphalan	148-82-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U151	U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are residues from RMERC only.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All U151 (mercury) wastewaters.	Mercury	7439-97-6	0.15	NA
	Elemental mercury contaminated with radioactive materials.	Mercury	7439-97-6	NA	AMLGM
U152	Methacrylonitrile	Methacrylonitrile	126-98-7	0.24	84
U153	Methanethiol	Methanethiol	74-93-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U154	Methanol	Methanol	67-56-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Methanol, alternate[6] set of standards for both wastewaters and nonwastewaters	67-56-1	5.6	0.75 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U155	Methapyrilene	Methapyrilene	91-80-5	0.081	1.5
U156	Methyl chlorocarbonate	Methyl chlorocarbonate	79-22-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U157	3-Methylcholanthrene	3-Methylcholanthrene	56-49-5	0.0055	15
U158	4,4'-Methylene bis(2-chloroaniline)	4,4'-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
U159	Methyl ethyl ketone	Methyl ethyl ketone	78-93-3	0.28	36
U160	Methyl ethyl ketone peroxide	Methyl ethyl ketone peroxide	1338-23-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U161	Methyl isobutyl ketone	Methyl isobutyl ketone	108-10-1	0.14	33
U162	Methyl methacrylate	Methyl methacrylate	80-62-6	0.14	160
U163	N-Methyl N'-nitro N-nitrosoguanidine	N-Methyl N'-nitro N-nitrosoguanidine	70-25-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U164	Methylthiouracil	Methylthiouracil	56-04-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U165	Naphthalene	Naphthalene	91-20-3	0.059	5.6
U166	1,4-Naphthoquinone	1,4-Naphthoquinone	130-15-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U167	1-Naphthlyamine	1-Naphthlyamine	134-32-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U168	2-Naphthlyamine	2-Naphthlyamine	91-59-8	0.52	CMBST
U169	Nitrobenzene	Nitrobenzene	98-95-3	0.068	14
U170	p-Nitrophenol	p-Nitrophenol	100-02-7	0.12	29
U171	2-Nitropropane	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U172	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-butylamine	924-16-3	0.40	17
U173	N-Nitrosodiethanolamine	N-Nitrosodiethanolamine	1116-54-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U174	N-Nitrosodiethylamine	N-Nitrosodiethylamine	55-18-5	0.40	28
U176	N-Nitroso-N-ethylurea	N-Nitroso-N-ethylurea	759-73-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U177	N-Nitroso-N-methylurea	N-Nitroso-N-methylurea	684-93-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U178	N-Nitroso-N-methylurethane	N-Nitroso-N-methylurethane	615-53-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U179	N-Nitrosopiperidine	N-Nitrosopiperidine	100-75-4	0.013	35
U180	N-Nitrosopyrrolidine	N-Nitrosopyrrolidine	93-55-2	0.013	35
U181	5-Nitro-o-toluidine	5-Nitro-o-toluidine	99-55-8	0.32	28
U182	Paraldehyde	Paraldehyde	123-63-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U183	Pentachlorobenzene	Pentachlorobenzene	608-93-5	0.055	10
U184	Pentachloroethane	Pentachloroethane	76-01-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Pentachloroethane; alternate[6] standards for both wastewaters and nonwastewaters	76-01-7	0.055	6.0
U185	Pentachloronitrobenzene	Pentachloronitrobenzene	82-68-8	0.055	4.8
U186	1,3-Pentadiene	1,3-Pentadiene	504-60-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U187	Phenacetin	Phenacetin	62-44-2	0.081	16
U188	Phenol	Phenol	108-95-2	0.039	6.2
U189	Phosphorus sulfide	Phosphorus sulfide	1314-80-3	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U190	Phthalic anhydride (measured as phthalic acid or terephthalic acid).	Phthalic anhydride (measured as phthalic acid or terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride	85-44-9	0.055	28
U191	2-Picoline	2-Picoline	109-06-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U192	Pronamide	Pronamide	23950-58-5	0.093	1.5
U193	1,3-Propane sultone	1,3-Propane sultone	1120-71-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U194	n-Propylamine	n-Propylamine	107-10-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U196	Pyridine	Pyridine	110-86-1	0.014	16
U197	p-Benzoquinone	p-Benzoquinone	106-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U200	Reserpine	Reserpine	50-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U201	Resorcinol	Resorcinol	108-46-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U203	Safrole	Safrole	94-59-7	0.081	22
U204	Selenium dioxide	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
U205	Selenium sulfide	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
U206	Streptozotocin	Streptozotocin	18883-66-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U207	1,2,4,5-Tetrachlorobenzene	1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
U208	1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
U209	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
U210	Tetrachloroethylene	Tetrachloroethylene	127-18-4	0.056	6.0
U211	Carbon tetrachloride	Carbon tetrachloride	56-23-5	0.057	6.0
U213	Tetrahydrofuran	Tetrahydrofuran	109-99-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U214	Thallium (I) acetate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U215	Thallium (I) carbonate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U216	Thallium (I) chloride	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U217	Thallium (I) nitrate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U218	Thioacetamide	Thioacetamide	62-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U219	Thiourea	Thiourea	62-56-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U220	Toluene	Toluene	108-88-3	0.080	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U221	Toluenediamine	Toluenediamine	25376-45-8	CARBN; or CMBST	CMBST
U222	o-Toluidine hydrochloride	o-Toluidine hydrochloride	636-21-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U223	Toluene diisocyanate	Toluene diisocyanate	26471-62-5	CARBN; or CMBST	CMBST
U225	Bromoform (Tribromomethane)	Bromoform (Tribromomethane)	75-25-2	0.63	15
U226	1,1,1-Trichloroethane	1,1,1-Trichloroethane	71-55-6	0.054	6.0
U227	1,1,2-Trichloroethane	1,1,2-Trichloroethane	79-00-5	0.054	6.0
U228	Trichloroethylene	Trichloroethylene	79-01-6	0.054	6.0
U234	1,3,5-Trinitrobenzene	1,3,5-Trinitrobenzene	99-35-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U235	tris-(2,3-Dibromopropyl)-phosphate	tris-(2,3-Dibromopropyl)-phosphate	126-72-7	0.11	0.10
U236	Trypan Blue	Trypan Blue	72-57-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U237	Uracil mustard	Uracil mustard	66-75-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U238	Urethane (Ethyl carbamate)	Urethane (Ethyl carbamate)	51-79-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U239	Xylenes	Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
U240	2,4-D (2,4-Dichlorophenoxyacetic acid)	2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10
	2,4-D (2,4-Dichlorophenoxyacetic acid) salts and esters		NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U243	Hexachloropropylene	Hexachloropropylene	1888-71-7	0.035	30
U244	Thiram	Thiram	137-26-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U246	Cyanogen bromide	Cyanogen bromide	506-68-3	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
U247	Methoxychlor	Methoxychlor	72-43-5	0.25	0.18
U248	Warfarin, and salts, when present at concentrations of 0.3% or less.	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

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U249	Zinc phosphide, Zn_3P_2, when present at concentrations of 10% or less.	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U271	Benomyl[10]	Benomyl	17804-35-2	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U278	Bendiocarb[10]	Bendiocarb	22781-23-3	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U279	Carbaryl[10]	Carbaryl	63-25-2	0.006; or CMBST, CHOXD, BIODG, or CARBN	0.14; or CMBST
U280	Barban[10]	Barban	101-27-9	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U328	o-Toluidine	o-Toluidine	95-53-4	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U353	p-Toluidine	p-Toluidine	106-49-0	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U359	2-Ethoxyethanol	2-Ethoxyethanol	110-80-5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U364	Bendiocarb phenol[10]	Bendiocarb phenol	22961-82-6	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U367	Carbofuran phenol[10]	Carbofuran phenol	1563-38-8	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U372	Carbendazim[10]	Carbendazim	10605-21-7	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U373	Propham[10]	Propham	122-42-9	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U387	Prosulfocarb[10]	Prosulfocarb	52888-80-9	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U389	Triallate[10]	Triallate	2303-17-5	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U394	A2213[10]	A2213	30558-43-1	0.042; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U395	Diethylene glycol, dicarbamate[10]	Diethylene glycol, dicarbamate	5952-26-1	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2]No.	Wastewaters: Concentration[3] mg/l; or Technology Code[4]	Nonwastewaters: Concentration[5] in mg/kg unless noted as "mg/l TCLP"; or Technology Code
U404	Triethylamine[10]	Triethylamine	121-44-8	0.081; or CMBST, CHOXD, BIODG, or CARBN	1.5; or CMBST
U409	Thiophanate-methyl[10]	Thiophanate-methyl	23564-05-8	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U410	Thiodicarb[10]	Thiodicarb	59669-26-0	0.019; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST
U411	Propoxur[10]	Propoxur	114-26-1	0.056; or CMBST, CHOXD, BIODG, or CARBN	1.4; or CMBST

Notes to Table:

1. The waste descriptions provided in this table do not replace waste descriptions in chapter 33-24-02. Descriptions of treatment/regulatory subcategories are provided, as needed, to distinguish between applicability of different standards.

2. CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

3. Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

4. All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in section 33-24-05-282 Table 1 - Technology Codes and Descriptions of Technology-Based Standards.

5. Except for metals (extraction procedure or toxicity characteristic leaching procedure) and cyanides (total and amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of sections 33-24-05-144 through 33-24-05-159 or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in subsection 4 of section 33-24-05-280. All concentration standards for nonwastewaters are based on analysis of grab samples.

6. Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the treatment/regulatory subcategory or physical form (for example, wastewater and/or nonwastewater) specified for that alternate standard.

7. Both cyanides (total) and cyanides (amenable) for nonwastewaters are to be analyzed using Method 9010C or 9012B, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Environmental Protection Agency publication SW-846, as incorporated by reference in section 33-24-01-05, with a sample size of 10 grams and a distillation time of one hour and fifteen minutes.

8. These wastes, when rendered nonhazardous and then subsequently managed in Clean Water Act, or Clean Water Act-equivalent systems, are not subject to treatment standards. (See subdivisions c and d of subsection 3 of section 33-24-05-250.)

9. These wastes, when rendered nonhazardous and then subsequently injected in a class I Safe Drinking Water Act well are not subject to treatment standards. (See 40 CFR section 148.1(d).)

10. The treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST in table 1 in section 33-24-05-282, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined by the technology code CMBST in table 1 of section 33-24-05-282, for wastewaters.

11. For these wastes, the definition of CMBST is limited to: (1) combustion units operating under sections 33-24-05-201 through 33-24-05-249, (2) combustion units permitted under sections 33-24-05-144 through 33-24-05-159, or (3) combustion units operating under the applicable standards of subsection 5 of section 33-24-06-16, which have obtained a determination of equivalent treatment under subsection 2 of section 33-24-05-282.

12. Disposal of K175 wastes that have complied with all applicable section 33-24-05-280 treatment standards must also be macroencapsulated in accordance with section 33-24-05-285 table 1 unless the waste is placed in: (1) A monofill regulated under article 33-20 containing only K175 wastes that meet all applicable section 33-24-05-280 treatment standards; or (2) A dedicated landfill cell regulated under article 33-20 in which all other wastes being co-disposed are at pH 6.0 or less.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-281. Treatment standards expressed as concentrations in waste extract.

For the requirements previously found in this section and for treatment standards in table CCWE-Constituent Concentrations in Waste Extracts, refer to section 33-24-05-280.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-282. Treatment standards expressed as specified technologies.

NOTE: For the requirements previously found in this section in Table 2 - Technology-Based Standards By Resource Conservation Recovery Act Waste Code, and Table 3 - Technology-Based Standards for Specific Radioactive Hazardous Mixed Waste, refer to section 33-24-05-280.

1. The following wastes in the table in section 33-24-05-280 "Treatment Standards for Hazardous Wastes", for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in the table entitled "Technology Codes and Description of Technology-Based Standards" in this section.

Table 1. Technology Codes and Description of Technology-Based Standards

Technology Code	Description of Technology-Based Standards
ADGAS:	Venting of compressed gases into an absorbing or reacting media (for example, solid or liquid)-venting can be accomplished through physical release utilizing valves/piping; physical penetration of the container; and/or penetration through detonation.
AMLGM:	Amalgamation of liquid, elemental mercury contaminated with radioactive materials utilizing inorganic reagents such as copper, zinc, nickel, gold, and sulfur that result in a nonliquid, semi-solid amalgam and thereby reducing potential emissions of elemental mercury vapors to the air.
BIODG:	Biodegradation of organics or non-metallic inorganics (for example, degradable inorganics that contain the elements of phosphorus, nitrogen, and sulfur) in units operated under either aerobic or anaerobic conditions such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (for example, Total Organic Carbon can often be used as an indicator parameter for the biodegradation of many organic constituents that cannot be directly analyzed in wastewater residues).
CARBN:	Carbon adsorption (granulated or powdered) of non-metallic inorganics, organo-metallics, and/or organic constituents, operated such that a surrogate compound or indicator parameter has not undergone breakthrough (for example, Total Organic Carbon can often be used as an indicator parameter for the adsorption of many organic constituents that cannot be directly analyzed in wastewater residues). Breakthrough occurs when the carbon has become saturated with the constituent (or

Table 1. Technology Codes and Description of Technology-Based Standards

Technology Code	Description of Technology-Based Standards
	indicator parameter) and substantial change in adsorption rate associated with that constituent occurs.
CHOXD:	Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combinations of reagents: (1) Hypochlorite (e.g. bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permangantes; and/or (9) other oxidizing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (for example, Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues). Chemical oxidation specifically includes what is commonly referred to as alkaline chlorination.
CHRED:	Chemical reduction utilizing the following reducing reagents (or waste reagents) or combinations of reagents: (1) Sulfur dioxide; (2) sodium, potassium, or alkali salts or sulfites, bisulfites, metabisulfites, and polyethylene glycols (for example, NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (for example, Total Organic Halogens can often be used as an indicator parameter for the reduction of many halogenated organic constituents that cannot be directly analyzed in wastewater residues). Chemical reduction is commonly used for the reduction of hexavalent chromium to the trivalent state.
CMBST:	High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of sections 33-24-05-144 through 33-24-05-159, sections 33-24-05-525 through 33-24-05-549, or subsection 5 of section 33-24-06-16, and in other units operated in accordance with applicable technical operating requirements; and certain noncombustive technologies, such as the catalytic extraction process.
DEACT:	Deactivation to remove the hazardous characteristics of a waste due to its ignitability, corrosivity, and/or reactivity.
FSUBS:	Fuel substitution in units operated in accordance with applicable technical operating requirements.
HLVIT:	Vitrification of high level mixed radioactive wastes in units in compliance with all applicable radioactive protection requirements under control of the Nuclear Regulatory Commission.
IMERC:	Incineration of wastes containing organics and mercury in units operated in accordance with the technical operating requirements of sections 33-24-05-144 through 33-24-05-159. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (for example, High or Low Mercury Subcategories).

Table 1. Technology Codes and Description of Technology-Based Standards

Technology Code	Description of Technology-Based Standards
INCIN:	Incineration in units operated in accordance with the technical operating requirements of sections 33-24-05-144 through 33-24-05-159.
LLEXT:	Liquid-liquid extraction (often referred to as solvent extraction) of organics from liquid wastes into an immiscible solvent for which the hazardous constituents have a greater solvent affinity, resulting in an extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and a raffinate (extracted liquid waste) proportionately low in organics that must undergo further treatment as specified in the standard.
MACRO:	Macroencapsulation with surface coating materials such as polymeric organics (e.g. resins and plastics) or with a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media. Macroencapsulation specifically does not include any material that would be classified as a tank or container according to section 33-24-01-04.
NEUTR:	Neutralization with the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals.
NLDBR:	No land disposal based on recycling.
POLYM:	Formation of complex high-molecular weight solids through polymerization of monomers in high-total organic carbon D001 nonwastewaters which are chemical components in the manufacture of plastics.
PRECP:	Chemical precipitation of metals and other inorganics as insoluble precipitates of oxides, hydroxides, carbonates, sulfides, sulfates, chlorides, flourides, or phosphates. The following reagents (or waste reagents) are typically used alone or in combination: (1) Lime (for example, containing oxides and/or hydroxides of calcium and/or magnesium; (2) caustic (for example, sodium and/or potassium hydroxides; (3) soda ash (for example, sodium carbonate); (4) sodium sulfide; (5) ferric sulfate or ferric chloride; (6) alum; or (7) sodium sulfate. Additional flocculating, coagulation or similar reagents/processes that enhance sludge dewatering characteristics are not precluded from use.
RBERY:	Thermal recovery of Beryllium.
RCGAS:	Recovery/reuse of compressed gases including techniques such as reprocessing of the gases for reuse/resale; filtering/adsorption of impurities; remixing for direct reuse or resale; and use of the gas as a fuel source.
RCORR:	Recovery of acids or bases utilizing one or more of the following recovery technologies: (1) Distillation (for example, thermal concentration); (2) ion exchange; (3) resin or solid adsorption; (4) reverse osmosis; and/or (5) incineration for the recovery of acid - Note: This does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.

Table 1. Technology Codes and Description of Technology-Based Standards

Technology Code	Description of Technology-Based Standards
RLEAD:	Thermal recovery of lead in secondary lead smelters.
RMERC:	Retorting or roasting in a thermal processing unit capable of volatilizing mercury and subsequently condensing the volatilized mercury for recovery. The retorting or roasting unit (or facility) must be subject to one or more of the following: (a) a National Emissions Standard for Hazardous Air Pollutants (NESHAP) for mercury; (b) a Best Available Control Technology (BACT) or a Lowest Achievable Emission Rate (LAER) standard for mercury imposed pursuant to a Prevention of Significant Deterioration (PSD) permit; or (c) a state permit that establishes emission limitations (within meaning of section 302 of the Clean Air Act) for mercury. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (for example, High or Low Mercury Subcategories).
RMETL:	Recovery of metals or inorganics utilizing one or more of the following direct physical/removal technologies: (1) Ion exchange; (2) resin or solid (for example, zeolites) adsorption; (3) reverse osmosis; (4) chelation/solvent extraction; (5) freeze crystallization; (6) ultrafiltration and/or (7) simple precipitation (for example, crystallization) - Note: This does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RORGS:	Recovery of organics utilizing one or more of the following technologies: (1) Distillation; (2) thin film evaporation; (3) steam stripping; (4) carbon adsorption; (5) critical fluid extraction; (6) liquid-liquid extraction; (7) precipitation/crystallization (including freeze crystallization); or (8) chemical phase separation techniques (for example, addition of acids, bases, demulsifiers, or similar chemicals) - Note: This does not preclude the use of other physical phase separation techniques such as a decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RTHRM:	Thermal recovery of metals or inorganics from nonwastewaters in units identified as industrial furnaces according to subdivisions a, f, g, k, and l of subsection 45 of section 33-24-01-04 under the definition of "industrial furnaces".
RZINC:	Resmelting in high temperature metal recovery units for the purpose of recovery of zinc.
STABL:	Stabilization with the following reagents (or waste reagents) or combinations of reagents: (1) Portland cement; or (2) lime/pozzolans (for example, fly ash and cement kiln dust) - this does not preclude the addition of reagents (for example, iron salts, silicates, and clays) designed to enhance the set/cure time and/or compressive strength, or to overall reduce the leachability of the metal or inorganic.
SSTRP:	Steam stripping of organics from liquid wastes utilizing direct application of steam to the wastes operated such that liquid and vapor flow rates, as well as temperature and pressure ranges, have been optimized, monitored, and maintained. These operating parameters are dependent

Table 1. Technology Codes and Description of Technology-Based Standards

Technology Code	Description of Technology-Based Standards
	upon the design parameters of the unit, such as the number of separation stages and the internal column design, thus resulting in a condensed extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and an extracted wastewater that must undergo further treatment as specified in the standard.
WETOX:	Wet air oxidation performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (for example, Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues).
WTRRX:	Controlled reaction with water for highly reactive inorganic or organic chemicals with precautionary controls for protection of workers from potential violent reactions as well as precautionary controls for potential emissions of toxic/ignitable levels of gases released during the reaction.

Note 1: When a combination of these technologies (for example, a treatment train) is specified as a single treatment standard, the order of application is specified in section 33-24-05-282, table 2 by indicating the five letter technology code that must be applied first, then the designation "fb" (an abbreviation for "followed by"), then the five letter technology code for the technology that must be applied next, and so on.

Note 2: When more than one technology (or treatment train) are specified as alternative treatment standards, the five letter technology codes (or the treatment trains) are separated by a semicolon(;) with the last technology preceded by the word "or". This indicates that any one of these BDAT technologies or treatment trains can be used for compliance with the standard.

2. Any person may submit an application to the administrator demonstrating that an alternative treatment method can achieve a measure of performance equivalent to that achieved by methods specified in subsections 1, 3, and 4 for wastes or specified in table 1 of section 33-24-05-285 for hazardous debris. The applicant must submit information demonstrating that the applicant's treatment method is in compliance with federal, state, and local requirements and is protective of human health and the environment. On the basis of such information and any other available information, the administrator may approve the use of the alternative treatment method if the administrator finds that the alternative treatment method provides a measure of performance equivalent to that achieved by methods specified in subsections 1, 3, and 4 for wastes or in table 1 of section 33-24-05-285 for hazardous debris. Any approval must be stated in writing and may contain such provisions and conditions as the administrator deems appropriate. The person to whom such approval is issued must comply with all limitations contained in such a determination.

3. As an alternative to the otherwise applicable sections 33-24-05-280 through 33-24-05-289 treatment standards, lab packs are eligible for land disposal provided the following requirements are met:

   a. The lab packs comply with the applicable provisions of section 33-24-05-185;

   b. The lab pack does not contain any of the wastes listed in appendix VIII of chapter 33-24-05;

c. The lab packs are incinerated in accordance with the requirements of sections 33-24-05-144 through 33-24-05-159; and

d. Any incinerator residues from lab packs containing D004, D005, D006, D007, D008, D010, and D011 are treated in compliance with the applicable treatment standards specified for such wastes in sections 33-24-05-280 through 33-24-05-289.

4. Radioactive hazardous mixed wastes are subject to the treatment standards in section 33-24-05-280. Where treatment standards are specified for radioactive mixed wastes in the Table of Treatment Standards, those treatment standards will govern. Where there is no specific treatment standard for radioactive mixed waste, the treatment standard for the hazardous waste (as designated by environmental protection agency/state waste code) applies. Hazardous debris containing radioactive waste is subject to the treatment standards specified in section 33-24-05-285.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-283. Treatment standards expressed as waste concentrations.

For the requirements previously found in this section and for treatments standards in table CCW - Constituent Concentrations in Wastes, refer to section 33-24-05-280.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-284. Variance from a treatment standard.

1. Based on a petition filed by a generator or treater of hazardous waste, the administrator may approve a variance from an applicable treatment standard if:

   a. It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or

   b. It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must either demonstrate that:

      (1) Treatment to the specified level or by the specified method is technically inappropriate (for example, resulting in combustion of large amounts of mildly contaminated environmental media); or

      (2) For remediation waste only, treatment to the specified level, or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation.

2. Each petition must be submitted in accordance with the procedures in section 33-24-01-06.

3. These petitions must include the following statement signed by the petitioner or an authorized representative: (I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.)

4. After receiving a petition for variance from a treatment standard, the administrator may request any additional information or samples which the administrator may require to evaluate the petition. Additional copies of the complete petition may be requested as needed to send to affected states and to the environmental protection agency regional offices.

5. The administrator will give public notice in the federal register of the intent to approve or deny a petition and provide an opportunity for public comment. The final decision on a variance from a treatment standard will be published in the federal register.

6. A generator, treatment facility, or disposal facility that is managing a waste covered by a variance from the treatment standards shall comply with the waste analysis requirements for restricted wastes found under section 33-24-05-256.

7. During the petition review process, an applicant is required to comply with all restrictions on land disposal under sections 33-24-05-250 through 33-24-05-299 once the effective date for the waste has been reached.

8. Based on a petition filed by a generator or treater of hazardous waste, the administrator, or the administrator's delegated representative, may approve a site-specific variance from an applicable treatment standard if:

   a. It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or

   b. It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must either demonstrate that:

      (1) Treatment to the specified level or by the specified method is technically inappropriate (for example, resulting in combustion of large amounts of mildly contaminated environmental media when the treatment standard is not based on combustion of such media); or

      (2) For remediation waste only, treatment to the specified level or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation.

   c. For contaminated soil only, treatment to the level or by the method specified in the soil treatment standards would result in concentrations of hazardous constituents that are below (for example, lower than) the concentrations necessary to minimize short- and long-term threats to human health and the environment. Treatment variances approved under this subsection must:

(1) At a minimum, impose alternative land disposal restriction treatment standards that, using a reasonable maximum exposure scenario:

(a) For carcinogens, achieve constituent concentrations that result in the total excess risk to an individual exposed over a lifetime generally falling within a range from 10^{-4} to 10^{-6}; and

(b) For constituents with noncarcinogenic effects, achieve constituent concentrations that an individual could be exposed to on a daily basis without appreciable risk of deleterious effect during a lifetime.

(2) Not consider post-land-disposal controls.

d. For contaminated soil only, treatment to the level or by the method specified in the soil treatment standards would result in concentrations of hazardous constituents that are below (for example, lower than) natural background concentrations at the site where the contaminated soil will be land disposed.

e. Public notice and reasonable opportunity for public comment must be provided before granting or denying a petition.

9. Each application for a site-specific variance from a treatment standard must include the information in subdivisions a through d of subsection 2 of section 33-24-01-06.

10. After receiving an application for a site-specific variance from a treatment standard, the assistant administrator, or a delegated representative, may request any additional information or samples which may be required to evaluate the application.

11. A generator, treatment facility, or disposal facility that is managing a waste governed by a site-specific variance from a treatment standard must comply with the waste analysis requirements for restricted wastes found under section 33-24-05-256.

12. During the application review process, the applicant for a site-specific variance must comply with all restrictions on land disposal under sections 33-24-05-250 through 33-24-05-299 once the effective date for the waste has been reached.

13. For all variances, the petitioner must also demonstrate that compliance with any given treatment variance is sufficient to minimize threats to human health and the environment posed by land disposal of the waste. In evaluating this demonstration, the environmental protection agency may take into account whether a treatment variance should be approved if the subject waste is to be used in a manner constituting disposal pursuant to sections 33-24-05-201 through 33-24-05-209.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-285. Treatment standards for hazardous debris.

1. **Treatment standards.** Hazardous debris must be treated prior to land disposal as follows unless the department determines under subdivision b of subsection 5 of section 33-24-02-03 that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in sections 33-24-05-280 through 33-24-05-289 for the waste contaminating the debris.

a. General. Hazardous debris must be treated for each "contaminant subject to treatment" defined by subsection 2 using the technology or technologies identified in table 1 of this section.

b. Characteristic debris. Hazardous debris that exhibits the characteristic of ignitability, corrosivity, or reactivity identified under sections 33-24-02-11, 33-24-02-12, and 33-24-02-13, respectively, must be deactivated by treatment using one of the technologies identified in table 1 of this section.

c. Mixtures of debris types. The treatment standards of table 1 in this section must be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.

d. Mixtures of contaminant types. Debris that is contaminated with two or more contaminants subject to treatment identified under subsection 2 must be treated for each contaminant using one or more treatment technologies identified in table 1 of this section. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.

e. Waste polychlorinated biphenyls. Hazardous debris that is also a waste polychlorinated biphenyl under 40 CFR part 761 is subject to the requirements of either 40 CFR part 761 or the requirements of this section, whichever are more stringent.

2. **Contaminants subject to treatment.** Hazardous debris must be treated for each "contaminant subject to treatment". The contaminants subject to treatment must be determined as follows:

a. Toxicity characteristic debris. The contaminants subject to treatment for debris that exhibits the toxicity characteristic (TC) by section 33-24-02-14 are those extraction procedure constituents (hazardous waste numbers D004 through D017) for which the debris exhibits the toxicity characteristic.

b. Debris contaminated with listed waste. The contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which treatment standards are established for waste under section 33-24-05-280.

c. Cyanide reactive debris. Hazardous debris that is reactive because of cyanide must be treated for cyanide.

3. **Conditioned exclusion of treated debris.** Hazardous debris that has been treated using one of the specified extraction or destruction technologies in table 1 of this section and that does not exhibit a characteristic of hazardous waste identified under sections 33-24-02-10 through 33-24-02-14 after treatment is not a hazardous waste and need not be managed in a hazardous waste facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in table 1 is a hazardous waste and must be managed in a hazardous waste facility.

4. **Treatment residuals.**

a. General requirements. Except as provided by subdivisions b and d:

(1) Residue from the treatment of hazardous debris must be separated from the treated debris using simple physical or mechanical means; and

(2) Residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by sections 33-24-05-280 through 33-24-05-289 for the waste contaminating the debris.

b. Nontoxic debris. Residue from the deactivation of ignitable, corrosive, or reactive characteristic hazardous debris (other than cyanide-reactive) that is not contaminated with a contaminant subject to treatment defined by subsection 2, must be deactivated prior to land disposal and is not subject to the waste-specific treatment standards of sections 33-24-05-280 through 33-24-05-289.

c. Cyanide-reactive debris. Residue from the treatment of debris that is reactive because of cyanide must meet the treatment standards for D003 in "treatment standards for hazardous wastes" at section 33-24-05-280.

d. Ignitable nonwastewater residue. Ignitable nonwastewater residue containing equal to or greater than ten percent total organic carbon is subject to the technology specified in the treatment standard for D001: ignitable liquids.

e. Residue from spalling. Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of this section.

Table 1. Alternative Treatment Standards for Hazardous Debris[1]

Technology Description	Performance and/or Design and Operating Standard	Contaminant Restrictions[2]
A. Extraction Technologies:		
1. Physical Extraction		
a. Abrasive Blasting: Removal of contaminated debris surface layers using water and/or air pressure to propel a solid media (for example, steel shot, aluminum oxide grit, plastic beads).	Glass, Metal, Plastic, Rubber: Treatment to a clean debris surface.[3] Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Removal of at least 0.6 cm of the surface layer; treatment to a clean debris surface.[3]	All Debris: None.
b. Scarification, Grinding, and Planing: Process utilizing striking piston heads, saws, or rotating grinding wheels such that contaminated debris surface layers are removed.	Same as above.	Same as above.
c. Spalling: Drilling or chipping holes at appropriate locations and depth in the contaminated debris surface and applying a tool which exerts a force on the sides of those holes such that the surface layer is removed. The surface layer removed remains hazardous debris subject to the debris treatment standards.	Same as above.	Same as above.

Table 1. Alternative Treatment Standards for Hazardous Debris[1]

Technology Description	Performance and/or Design and Operating Standard	Contaminant Restrictions[2]
d. Vibratory Finishing: Process utilizing scrubbing media, flushing fluid, and oscillating energy such that hazardous contaminants or contaminated debris surface layers are removed.[4]	Same as above.	Same as above.
e. High Pressure Steam and Water Sprays: Application of water or steam sprays of sufficient temperature, pressure, residence time, agitation, surfactants, and detergents to remove hazardous contaminants from debris surfaces or to remove contaminated debris surface layers.	Same as above.	Same as above.
2. Chemical Extraction		
a. Water Washing and Spraying: Application of water sprays or water baths of sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and detergents to remove hazardous contaminants from debris surfaces and surface pores or to remove contaminated debris surface layers.	All Debris: Treatment to a clean debris surface[3]; Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (for example, thickness limit,[5] except that this thickness limit may be waived under an "Equivalent Technology" approval under subsection 2 of section 33-24-05-282;[8] debris surfaces must be in contact with water solution for at least 15 minutes.	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Contaminant must be soluble to at least 5% by weight in water solution or 5% by weight in emulsion; if debris is contaminated with a dioxin-listed waste,[6] and "Equivalent Technology" approval under subsection 2 of section 33-24-05-282 must be obtained.[8]
b. Liquid Phase Solvent Extraction: Removal of hazardous contaminants from debris surfaces and surface pores by applying a nonaqueous liquid or liquid solution which causes the hazardous contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution while using appropriate agitation, temperature, and residence time.[4]	Same as above.	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Same as above, except that contaminant must be soluble to at least 5% by weight in the solvent.
c. Vapor Phase Solvent Extraction: Application of an organic vapor using sufficient agitation, residence time, and temperature to cause hazardous contaminants on	Same as above, except that brick, cloth, concrete, paper, pavement, rock and wood surfaces must be in contact with the organic vapor for at least	Same as above.

Table 1. Alternative Treatment Standards for Hazardous Debris[1]

Technology Description	Performance and/or Design and Operating Standard	Contaminant Restrictions[2]
contaminated debris surfaces and surface pores to enter the vapor phase and be flushed away with the organic vapor.[4]	60 minutes.	
3. Thermal Extraction		
a. High Temperature Metals Recovery: Application of sufficient heat, residence time, mixing, fluxing agents, and/or carbon in a smelting, melting, or refining furnace to separate metals from debris.	For refining furnaces, treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residuals must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	Debris contaminated with a dioxin-listed waste:[5] Obtain an "Equivalent Technology" approval under subsection 2 of section 33-24-05-282.[8]
b. Thermal Desorption: Heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient temperature and residence time to vaporize hazardous contaminants from contaminated surfaces and surface pores and to remove the contaminants from the heating chamber in a gaseous exhaust gas.[7]	All Debris: Obtain an "Equivalent Technology" approval under subsection 2 of section 33-24-05-282;[8] treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 10 cm (4 inches) in one dimension (for example, thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval.	All Debris: Metals other than mercury.
B. Destruction Technologies:		
1. Biological Destruction (Biodegradation): Removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegradation of organic or nonmetallic inorganic compounds (for example, inorganics that contain phosphorus, nitrogen, or sulfur) in units operated under	All Debris: Obtain an "Equivalent Technology" approval under subsection 2 of section 33-24-05-282;[8] treated debris must be separated from treatment residuals using simple physical or mechanical means,[9]and, prior to further treatment, such residue must meet the waste-specific treatment	All Debris: Metal contaminants.

Table 1. Alternative Treatment Standards for Hazardous Debris[1]

Technology Description	Performance and/or Design and Operating Standard	Contaminant Restrictions[2]
either aerobic or anaerobic conditions.	standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (for example, thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval.	
2. Chemical Destruction		
a. Chemical Oxidation: Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combination of reagents-(1) hypochlorite (for example, bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permanganates; and/or (9) other oxidizing reagents of equivalent destruction efficiency.[4] Chemical oxidation specifically includes what is referred to as alkaline chlorination.	All Debris: Obtain an "Equivalent Technology" approval under subsection 2 of section 33-24-05-282;[8] treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (for example, thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval.	All Debris: Metal contaminants.
b. Chemical Reduction: Chemical reaction utilizing the following reducing reagents (or waste reagents) or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (for example, NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency.[4]	Save as above.	Same as above.

Table 1. Alternative Treatment Standards for Hazardous Debris[1]

Technology Description	Performance and/or Design and Operating Standard	Contaminant Restrictions[2]
3. Thermal Destruction: Treatment in an incinerator operating in accordance with sections 33-24-05-144 through 33-24-05-159 or Subpart O of 40 CFR 265; a boiler or industrial furnace operating in accordance with sections 33-24-05-525 through 33-24-05-549, or other thermal treatment unit operated in accordance with sections 33-24-05-299 through 33-24-05-399, or Subpart P, Part 265 of the 40 CFR, but excluding for purposes of these debris treatment standards Thermal Desorption units.	Treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	Brick, Concrete, Glass, Metal, Pavement, Rock, Metal: Metals other than mercury, except that there are no metal restrictions for vitrification. Debris contaminated with a dioxin-listed waste.[6] Obtain an "Equivalent Technology" approval under subsection 2 of section 33-24-05-282,[8] except that this requirement does not apply to vitrification.
C. Immobilization Technologies:		
1. Macroencapsulation: Application of surface coating materials such as polymeric organics (for example, resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.	Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).	None.
2. Microencapsulation: Stabilization of the debris with the following reagents (or waste reagents) such that the leachability of the hazardous contaminants is reduced: (1) Portland cement; or (2) lime/pozzolans (for example, fly ash and cement kiln dust). Reagents (for example, iron salts, silicates, and clays) may be added to enhance the set/cure time and/or compressive strength, or to reduce the leachability of the hazardous constituents.[5]	Leachability of the hazardous contaminants must be reduced.	None.
3. Sealing: Application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter	Sealing must avoid exposure of the debris surface to potential leaching media and sealant must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste,	None.

Table 1. Alternative Treatment Standards for Hazardous Debris[1]

Technology Description	Performance and/or Design and Operating Standard	Contaminant Restrictions[2]
and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds, but paint may not be used as a sealant.	microbes).	

FOOTNOTE: [1]Hazardous debris must be treated by either these standards of the waste-specific treatment standards for the waste contaminating the debris. The treatment standards must be met for each type of debris contained in a mixture of debris types, unless the debris is converted into treatment residue as a result of the treatment process. Debris treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

FOOTNOTE: [2]Contaminant restriction means that the technology is not BDAT for that contaminant. If debris containing a restricted contaminant is treated by the technology, the contaminant must be subsequently treated by a technology for which it is not restricted in order to be land disposed (and excluded from Article 33-24).

FOOTNOTE: [3]"Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

FOOTNOTE: [4]Acids, solvents, and chemical reagents may react with some debris and contaminants to form hazardous compounds. For example, acid washing of cyanide-contaminated debris could result in the formation of hydrogen cyanide. Some acids may also react violently with some debris and contaminants, depending on the concentration of the acid and the type of debris and contaminants. Debris treaters should refer to the safety precautions specified in Material Safety Data Sheets for various acids to avoid applying an incompatible acid to a particular debris/contaminant combination. For example, concentrated sulfuric acid may react violently with certain organic compounds, such as acrylonitrile.

FOOTNOTE: [5]If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction. At a minimum, simple physical or mechanical means must be used to provide such cleaning and separation of nondebris materials to ensure that the debris surface is free of caked soil, waste, or other nondebris material.

FOOTNOTE: [6]Dioxin-listed wastes are hazardous waste numbers F020, F021, F022, F023, F026, and F027.

FOOTNOTE: [7]Thermal desorption is distinguished from Thermal Destruction in that the primary purpose of Thermal Desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or other treatment.

FOOTNOTE: [8]The demonstration "Equivalent Technology" under subsection 2 of section 33-24-05-282 must document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in this table such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent management controls.

FOOTNOTE: [9]Any soil, waste, and other nondebris material that remains on the debris surface (or remains mixed with the debris) after treatment is considered a treatment residual that must be separated from the debris using, at a minimum, simple physical or mechanical means. Examples of simple physical or mechanical means are vibratory or trommel screening or water washing. The debris surface need not be cleaned to a "clean debris surface" as defined in note 3 when separating treated debris from residue; rather, the surface must be free of caked soil, waste, or other nondebris material. Treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-286. Alternative treatment standards based on high temperatures metal recovery.

For the treatment standards previously found in this section, refer to section 33-24-05-280.

History: Effective January 1, 1994; amended effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-287. [Reserved]

33-24-05-288. Universal treatment standards.

Table "Universal Treatment Standards" identifies the hazardous constituents, along with the nonwastewater and wastewater treatment standard levels, that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in subsection 10 of section 33-24-05-251, these treatment standards may not be exceeded. Compliance with these treatment standards is measured by an analysis of grab samples, unless otherwise noted in the following table "Universal Treatment Standards".

Universal Treatment Standards

	Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
I.	**Organic Constituents:**			
	Acenaphthene	83-32-9	0.059	3.4
	Acenaphthylene	208-96-8	0.059	3.4
	Acetone	67-64-1	0.28	160
	Acetonitrile	75-05-8	5.6	38
	Acetophenone	96-86-2	0.010	9.7
	2-Acetylaminofluorene	53-96-3	0.059	140
	Acrolein	107-02-8	0.29	NA
	Acrylamide	79-06-1	19	23
	Acrylonitrile	107-13-1	0.24	84
	Aldrin	309-00-2	0.021	0.066

Universal Treatment Standards

Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
4-Aminobiphenyl	92-67-1	0.13	NA
Aniline	62-53-3	0.81	14
o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
Anthracene	120-12-7	0.059	3.4
Aramite	140-57-8	0.36	NA
alpha-BHC	319-85-7	0.00014	0.066
beta-BHC	319-84-7	0.00014	0.066
delta-BHC	319-86-8	0.023	0.066
gamma-BHC	58-89-9	0.0017	0.066
Benz(a)anthracene	56-55-3	0.059	3.4
Benzal chloride	98-87-3	0.055	6.0
Benzene	71-43-2	0.14	10
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
Benzo(a)pyrene	50-32-8	0.061	3.4
Bromodichloromethane	75-27-4	0.35	15
Bromomethane/Methyl bromide	74-83-9	0.11	15
4-Bromophenyl phenyl ether	101-55-3	0.055	15
n-Butyl alcohol	71-36-3	5.6	2.6
Butyl benzyl phthalate	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol/ Dinoseb	88-85-7	0.066	2.5
Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56-23-5	0.057	6.0
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16
Chlorobenzene	108-90-7	0.057	6.0
Chlorobenzilate	510-15-6	0.10	NA
2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
Chlorodibromomethane	124-48-1	0.057	15
Chloroethane	75-00-3	0.27	6.0
bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
2-Chloroethyl vinyl ether	110-75-8	0.062	NA
Chloroform	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2

Universal Treatment Standards

Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
p-Chloro-m-cresol	59-50-7	0.018	14
Chloromethane/methyl chloride	74-87-3	0.19	30
2-Chloronaphthalene	91-58-7	0.055	5.6
2-Chlorophenol	95-57-8	0.044	5.7
3-Chloropropylene	107-05-1	0.036	30
Chrysene	218-01-9	0.059	3.4
p-Cresidine	120-71-8	0.010	0.66
o-Cresol	95-48-7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
o,p'-DD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106-93-4	0.028	15
Dibromomethane	74-95-3	0.11	15
m-Dichlorobenzene	541-73-1	0.036	6.0
o-Dichlorobenzene	95-50-1	0.088	6.0
p-Dichlorobenzene	106-46-7	0.090	6.0
Dichlorodifluoromethane	75-71-8	0.23	7.2
1,1-Dichloroethane	75-34-3	0.059	6.0
1,2-Dichloroethane	107-06-2	0.21	6.0
1,1-Dichloroethylene	75-35-4	0.025	6.0
trans-1,2-Dichloroethylene	156-60-5	0.054	30
2,4-Dichlorophenol	120-83-2	0.044	14
2,6-Dichlorophenol	87-65-0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94-75-7	0.72	10
1,2-Dichloropropane	78-87-5	0.85	18
cis-1,3-Dichloropropylene	10061-01-5	0.036	18
trans-1,3-Dichloropropylene	10061-02-6	0.036	18

Universal Treatment Standards

Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
Dieldrin	60-57-1	0.017	0.13
Diethyl phthalate	84-66-2	0.20	28
p-Dimethylaminoazobenzene	60-11-7	0.13	NA
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	0.010	0.66
2-4-Dimethyl phenol	105-67-9	0.036	14
Dimethyl phthalate	131-11-3	0.047	28
Di-n-butyl phthalate	84-74-2	0.057	28
1,4-Dinitrobenzene	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol	534-52-1	0.28	160
2,4-Dinitrophenol	51-28-5	0.12	160
2,4-Dinitrotoluene	121-14-2	0.32	140
2,6-Dinitrotoluene	606-20-2	0.55	28
Di-n-octyl phthalate	117-84-0	0.017	28
Di-n-propylnitrosamine	621-64-7	0.40	14
1,4-Dioxane	123-91-1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
1,2-Diphenylhydrazine	122-66-7	0.087	NA
Disulfoton	298-04-4	0.017	6.2
Endosulfan I	959-98-8	0.023	0.066
Endosulfan II	33213-65-9	0.029	0.13
Endosulfan sulfate	1031-07-8	0.029	0.13
Endrin	72-20-8	0.0028	0.13
Endrin aldehyde	7421-93-4	0.025	0.13
Ethyl acetate	141-78-6	0.34	33
Ethyl benzene	100-41-4	0.057	10
Ethyl cyanide/Propanenitrile	107-12-0	0.24	360
Ethyl ether	60-29-7	0.12	160
bis(2-Ethylhexyl)phthalate	117-81-7	0.28	28
Ethyl methacrylate	97-63-2	0.14	160
Ethylene oxide	75-21-8	0.12	NA
Famphur	52-85-7	0.017	15
Fluoranthene	206-44-0	0.068	3.4
Fluorene	86-73-7	0.059	3.4
Heptachlor	76-44-8	0.0012	0.066
Heptachlor epoxide	1024-57-3	0.016	0.066

Universal Treatment Standards

Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035	0.0025
1,2,3,4,6,7,8-Heptachlorodibenzo furan (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035	0.0025
1,2,3,4,7,8,9-Heptachloro dibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7	0.000035	0.0025
Hexachlorobenzene	118-74-1	0.055	10
Hexachlorocyclopentadiene	77-47-4	0.057	2.4
Hexachloroethane	67-72-1	0.055	30
Hexachloropropylene	1888-71-7	0.035	30
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
Iodomethane	74-88-4	0.19	65
Isobutyl alcohol	78-83-1	5.6	170
Isodrin	465-73-6	0.021	0.066
Isosafrole	120-58-1	0.081	2.6
Kepone	143-50-0	0.0011	0.13
Methacrylonitrile	126-98-7	0.24	84
Methanol	67-56-1	5.6	0.75 mg/l TCLP
Methapyrilene	91-80-5	0.081	1.5
Methoxychlor	72-43-5	0.25	0.18
Methyl ethyl ketone	78-93-3	0.28	36
Methyl isobutyl ketone	108-10-1	0.14	33
Methyl methacrylate	80-62-6	0.14	160
Methyl methansulfonate	66-27-3	0.018	NA
Methyl parathion	298-00-0	0.014	4.6
3-Methylchloranthrene	56-49-5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
Methylene chloride	75-09-2	0.089	30
Naphthalene	91-20-3	0.059	5.6
2-Naphthylamine	91-59-8	0.52	NA
o-Nitroaniline	88-74-4	0.27	14
p-Nitroaniline	100-01-6	0.028	28
Nitrobenzene	98-95-3	0.068	14
5-Nitro-o-toluidine	99-55-8	0.32	28
o-Nitrophenol	88-75-5	0.028	13

Universal Treatment Standards

Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
p-Nitrophenol	100-02-7	0.12	29
N-Nitrosodiethylamine	55-18-5	0.40	28
N-Nitrosodimethylamine	62-75-9	0.40	2.3
N-Nitroso-di-n-butylamine	924-16-3	0.40	17
N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
N-Nitrosomorpholine	59-89-2	0.40	2.3
N-Nitrosopiperidine	100-75-4	0.013	35
N-Nitrosopyrrolidine	930-55-2	0.013	35
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063	0.005
1,2,3,4,6,7,8,9-Octachlorodibenzo furan (OCDF)	39001-02-0	0.000063	0.005
Parathion	56-38-2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)[8]	1336-36-3	0.10	10
Pentachlorobenzene	608-93-5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzo-furans)	NA	0.000035	0.001
Pentachloroethane	76-01-7	0.055	6.0
Pentachloronitrobenzene	82-68-8	0.055	4.8
Pentachlorophenol	87-86-5	0.089	7.4
Phenacetin	62-44-2	0.081	16
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
1,3-Phenylenediamine	108-45-2	0.010	0.66
Phorate	298-02-2	0.021	4.6
Phthalic acid	100-21-0	0.055	28
Phthalic anhydride	85-44-9	0.055	28
Pronamide	23950-58-5	0.093	1.5
Pyrene	129-00-0	0.067	8.2
Pyridine	110-86-1	0.014	16
Safrole	94-59-7	0.081	22
Silvex/2,4,5-TP	93-72-1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0

Universal Treatment Standards

	Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
	1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
	Tetrachloroethylene	127-18-4	0.056	6.0
	2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
	Toluene	108-88-3	0.080	10
	Toxaphene	8001-35-2	0.0095	2.6
	Tribromomethane/Bromoform	75-25-2	0.63	15
	1,2,4-Trichlorobenzene	120-82-1	0.055	19
	1,1,1-Trichlorethane	71-55-6	0.054	6.0
	1,1,2-Trichlorethane	79-00-5	0.054	6.0
	Trichloroethylene	79-01-6	0.054	6.0
	Trichlorofluoromethane	75-69-4	0.020	30
	2,4,5-Trichlorophenol	95-95-4	0.18	7.4
	2,4,6-Trichlorophenol	88-06-2	0.035	7.4
	2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93-76-5	0.72	7.9
	1,2,3-Trichloropropane	96-18-4	0.85	30
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
	tris-(2,3-Dibromopropyl) phosphate	126-72-7	0.11	0.10
	Vinyl chloride	75-01-4	0.27	6.0
	Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
II.	**Inorganic Consitutents:**			
	Antimony	7440-36-0	1.9	1.15 mg/l TCLP
	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
	Barium	7440-39-3	1.2	21 mg/l TCLP
	Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
	Cyanides (Total)[4]	57-12-5	1.2	590
	Cyanides (Amenable)[4]	57-12-5	0.86	30
	Fluoride[5]	16984-48-8	35	NA
	Lead	7439-92-1	0.69	0.75 mg/l TCLP
	Mercury--Nonwastewater from Retort	7439-97-6	NA	0.20 mg/l TCLP
	Mercury--All Others	7439-97-6	0.15	0.025 mg/l TCLP
	Nickel	7440-02-0	3.98	11 mg/l TCLP
	Selenium[7]	7782-49-2	0.82	5.7 mg/l TCLP
	Silver	7440-22-4	0.43	0.14 mg/l TCLP
	Sulfide[5]	18496-25-8	14	NA

Universal Treatment Standards

Regulated Constituent/ Common Name	CAS[1] Number	Wastewater Standard Concentration[2] in mg/l	Nonwastewater Standard Concentration[3] in mg/kg unless noted as "mg/l TCLP"
Thallium	7440-28-0	1.4	0.20 mg/l TCLP
Vanadium[5]	7440-62-2	4.3	1.6 mg/l TCLP
Zinc[5]	7440-66-6	2.61	4.3 mg/l TCLP

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[2] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[3] Except for Metals (Extraction procedure or toxicity characteristic leaching procedure) and cyanides (total and amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of sections 33-24-05-144 through 33-24-05-159, and the applicable requirements under subsection 5 of section 33-24-06-16, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in subsection 4 of section 33-24-05-280. All concentration standards for nonwastewaters are based on analysis of grab samples.

[4] Both cyanides (total) and cyanides (amenable) for nonwastewaters are to be analyzed using Method 9010C or 9012B, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05, with a sample size of 10 grams and a distillation time of one hour and fifteen minutes.

[5] These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at subsection 10 of section 33-24-05-251.

[6] [Reserved]

[7] This constituent is not an underlying hazardous constituent as defined in subsection 10 of section 33-24-05-251 because its UTS level is greater than its toxicity characteristic level, thus a treated selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.

[8] This standard is temporarily deferred for soil exhibiting a hazardous characteristic due to D004 through D011 only.

Note: NA means not applicable.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-04

33-24-05-289. Alternative land disposal restriction treatment standards for contaminated soil.

1. Applicability. The generator or treatment, storage, or disposal facility must comply with land disposal restrictions prior to placing soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of hazardous waste at the time soil that exhibits or exhibited a characteristic of hazardous waste was generated, into a land disposal unit. The following chart describes whether the generator or treatment, storage, or disposal facility must comply with land disposal restrictions prior to placing soil contaminated by listed hazardous waste into a land disposal unit:

If land disposal restrictions	And if land disposal restrictions	And if	Then you
Applied to the listed waste when it contaminated the soil*.	Apply to the listed waste now.		Must comply with the land disposal restrictions.
Did not apply to the listed	Apply to the listed waste	The soil is determined to	Must comply with the land

waste when it contaminated the soil*.	now.	contain a listed waste when the soil is first generated.	disposal restrictions.
Did not apply to the listed waste when it contaminated the soil*.	Apply to the listed waste now.	The soil is determined not to contain a listed waste when the soil is first generated.	Need not comply with the land disposal restrictions.
Did not apply to the listed waste when it contaminated the soil*.	Do not apply to the listed waste now.		Need not comply with the land disposal restrictions.

*For dates of land disposal restriction applicability, see appendix XI to chapter 33-24-05. To determine the date any given listed hazardous waste contaminated any given volume of soil, use the last date any given listed hazardous waste was placed into any given land disposal unit or, in the case of an accidental spill, the date of the spill.

2. Prior to land disposal, contaminated soil identified by subsection 1 as needing to comply with land disposal restrictions must be treated according to the applicable treatment standards specified in subsection 3 or according to the universal treatment standards specified in section 33-24-05-288 applicable to the contaminating listed hazardous waste or the applicable characteristic of hazardous waste if the soil is characteristic, or both. The treatment standards specified in subsection 3 and the universal treatment standards may be modified through a treatment variance approved in accordance with section 33-24-05-284.

3. Treatment standards for contaminated soils. Prior to land disposal, contaminated soil identified by subsection 1 as needing to comply with land disposal restrictions must be treated according to all the standards specified in this subsection or according to the universal treatment standards specified in section 33-24-05-288.

   a. All soils. Prior to land disposal, all constituents subject to treatment must be treated as follows:

      (1) For nonmetals, except carbon disulfide, cyclohexanone, and methanol, treatment must achieve ninety percent reduction in total constituent concentrations, except as provided by paragraph 3.

      (2) For metals and carbon disulfide, cyclohexanone, and methanol, treatment must achieve ninety percent reduction in constituent concentrations as measured in leachate from the treated media (tested according to the toxicity characteristic leaching procedure) or ninety percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by paragraph 3.

      (3) When treatment of any constituent subject to treatment to a ninety percent reduction standard would result in a concentration less than ten times the universal treatment standard for that constituent, treatment to achieve constituent concentrations less than ten times the universal treatment standard is not required. Universal treatment standards are identified in table "universal treatment standards" in section 33-24-05-288.

   b. Soils that exhibit the characteristic of ignitability, corrosivity, or reactivity. In addition to the treatment required by subdivision a, prior to land disposal, soils that exhibit the characteristic of ignitability, corrosivity, or reactivity must be treated to eliminate these characteristics.

c. Soils that contain nonanalyzable constituents. In addition to the treatment requirements of subdivisions a and b, prior to land disposal, the following treatment is required for soils that contain nonanalyzable constituents:

(1) For soil that contains only analyzable and nonanalyzable organic constituents, treatment of the analyzable constituents to the levels specified in subdivisions a and b; or

(2) For soil that contains only nonanalyzable constituents, treatment by the method or methods specified in section 33-24-05-282 for the waste contained in the soil.

4. Constituents subject to treatment. When applying the soil treatment standards in subsection 3, constituents subject to treatment are any constituents listed in section 33-24-05-288, table "universal treatment standards" that are reasonably expected to be present in any given volume of contaminated soil, except fluoride, selenium, sulfides, vanadium, and zinc, and are present at concentrations greater than ten times the universal treatment standard. Polychlorinated biphenyls are not a constituent subject to treatment in any given volume of soil which exhibits the toxicity characteristic solely because of the presence of metals.

5. Management of treatment residuals. Treatment residuals from treating contaminated soil identified by subsection 1 as needing to comply with land disposal restrictions must be managed as follows:

a. Soil residuals are subject to the treatment standards of this section;

b. Nonsoil residuals are subject to:

(1) For soils contaminated by listed hazardous waste, the article 33-24 standards applicable to the listed hazardous waste; and

(2) For soils that exhibit a characteristic of hazardous waste, if the nonsoil residual also exhibits a characteristic of hazardous waste, the treatment standards applicable to the characteristic hazardous waste.

History: Effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-290. Prohibitions on storage of restricted wastes.

1. Except as provided in this section, the storage of hazardous wastes restricted from land disposal under sections 33-24-05-266 through 33-24-05-279 is prohibited, unless the following conditions are met:

a. A generator stores such wastes in tanks, containers, or containment buildings onsite solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and the generator complies with the requirements in section 33-24-03-12, chapter 33-24-05, and the applicable requirements of subsection 5 of section 33-24-06-16;

b. An owner or operator of a hazardous waste treatment, storage, or disposal facility stores such wastes in tanks, containers, or containment buildings solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and:

(1) Each container is clearly marked to identify its contents and the date each period of accumulation begins; and

(2) Each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility. Regardless of whether the tank itself is marked, an owner or operator shall comply with the operating record requirements specified in section 33-24-05-40; and

c. A transporter stores manifested shipments of such wastes at a transfer facility for ten days or less.

2. An owner or operator of a treatment, storage, or disposal facility may store such wastes for up to one year unless the department can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous wastes as are necessary to facilitate proper recovery, treatment, or disposal.

3. An owner or operator of a treatment, storage, or disposal facility may store such wastes beyond one year; however, the owner or operator bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous wastes as are necessary to facilitate proper recovery, treatment, or disposal.

4. If a generator's waste is exempt from a prohibition on the type of land disposal utilized for the waste, for example, because of an approved case-by-case extension under section 33-24-05-254, or a national capacity variance under section sections 33-24-05-266 through 33-24-05-279, the prohibition in subsection 1 does not apply during the period of such exemption.

5. The prohibition in subsection 1 does not apply to hazardous wastes that meet the treatment standard specified under sections 33-24-05-281, 33-24-05-282, and 33-24-05-283 or the treatment standard specified under the variance in section 33-24-05-284, or, where treatment standards have not been specified, is in compliance with the applicable prohibitions specified in section 33-24-04-272 or Resource Conservation and Recovery Act section 3004.

6. Liquid hazardous wastes containing polychlorinated biphenyls at concentrations greater than or equal to fifty parts per million must be stored at a facility that meets the requirements of 40 CFR 761.65(b) and must be removed from storage and treated or disposed as required under sections 33-24-05-250 through 33-24-05-299 within one year of the date when such wastes are first placed into storage. The provisions of subsection 3 do not apply to such polychlorinated biphenyls wastes prohibited under section 33-24-05-272.

7. The prohibition and requirements in this section do not apply to hazardous remediation wastes stored in a staging pile approved pursuant to section 33-24-05-554.

History: Effective December 1, 1988; amended effective December 1, 1991; January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-291. [Reserved]

33-24-05-292. [Reserved]

33-24-05-293. [Reserved]

33-24-05-294. [Reserved]

33-24-05-295. [Reserved]

33-24-05-296. [Reserved]

33-24-05-297. [Reserved]

33-24-05-298. [Reserved]

33-24-05-299. [Reserved]

33-24-05-300. Applicability to miscellaneous units.

Sections 33-24-05-300 through 33-24-05-309 apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units, except as section 33-24-05-01 provides otherwise.

History: Effective December 1, 1991; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-301. Environmental performance standards.

A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Permits for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions must include those requirements of sections 33-24-05-89 through 33-24-05-190, sections 33-24-05-400 through 33-24-05-474, chapter 33-24-06, 40 CFR part 63, subpart EEE, and 40 CFR part 146 that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:

1. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the ground water or subsurface environment, considering:

    a. The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;

    b. The hydrologic and geologic characteristics of the unit and the surrounding area;

    c. The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water;

    d. The quantity and direction of ground water flow;

    e. The proximity to and withdrawal rates of current and potential ground water users;

    f. The patterns of land use in the region;

    g. The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food chain crops and other vegetation;

h. The potential for health risks caused by human exposure to waste constituents; and

i. The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

2. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface considering:

   a. The volume and physical and chemical characteristics of the waste in the unit;

   b. The effectiveness and reliability of containing, confining, and collecting systems in structures in preventing migration;

   c. The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;

   d. The patterns of precipitation in the region;

   e. The quantity, quality, and direction of ground water flow;

   f. The proximity of the unit to surface waters;

   g. The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;

   h. The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;

   i. The patterns of land use in the region;

   j. The potential for health risks caused by human exposure to waste constituents; and

   k. The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

3. Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering:

   a. The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols, and particulate;

   b. The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;

   c. The operating characteristics of the unit;

   d. The atmospheric, meteorologic, and topographic characteristics of the unit and the surrounding area;

   e. The existing quality of the air, including other sources of contamination and their cumulative impact on the air;

   f. The potential for health risks caused by human exposure to waste constituents; and

   g. The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-302. Monitoring, analysis, inspection, response, reporting, and corrective action.

Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with sections 33-24-05-06, 33-24-05-17, 33-24-05-42, 33-24-05-43, 33-24-05-44, 33-24-05-58, and 33-24-05-301 as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

History: Effective December 1, 1991; amended effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-303. Postclosure care.

A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with section 33-24-05-301 during the postclosure care period. In addition, if a treatment or storage unit has contaminated soils or ground water that cannot be completely removed or decontaminated during closure, then that unit must also meet the requirements of section 33-24-05-301 during postclosure care. The postclosure plan under section 33-24-05-67 must specify the requirements that will be used to satisfy this requirement.

History: Effective December 1, 1991.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-304. [Reserved]

33-24-05-305. [Reserved]

33-24-05-306. [Reserved]

33-24-05-307. [Reserved]

33-24-05-308. [Reserved]

33-24-05-309. [Reserved]

33-24-05-310. [Reserved]

33-24-05-311. [Reserved]

33-24-05-312. [Reserved]

33-24-05-313. [Reserved]

33-24-05-314. [Reserved]

33-24-05-315. [Reserved]

33-24-05-316. [Reserved]

33-24-05-317. [Reserved]

33-24-05-318. [Reserved]

33-24-05-319. [Reserved]

33-24-05-320. [Reserved]

33-24-05-321. [Reserved]

33-24-05-322. [Reserved]

33-24-05-323. [Reserved]

33-24-05-324. [Reserved]

33-24-05-325. [Reserved]

33-24-05-326. [Reserved]

33-24-05-327. [Reserved]

33-24-05-328. [Reserved]

33-24-05-329. [Reserved]

33-24-05-330. [Reserved]

33-24-05-331. [Reserved]

33-24-05-332. [Reserved]

33-24-05-333. [Reserved]

33-24-05-334. [Reserved]

33-24-05-335. [Reserved]

33-24-05-336. [Reserved]

33-24-05-337. [Reserved]

33-24-05-338. [Reserved]

33-24-05-339. [Reserved]

33-24-05-340. [Reserved]

33-24-05-341. [Reserved]

33-24-05-342. [Reserved]

33-24-05-343. [Reserved]

33-24-05-344. [Reserved]

33-24-05-345. [Reserved]

33-24-05-346. [Reserved]

33-24-05-347. [Reserved]

33-24-05-348. [Reserved]

33-24-05-349. [Reserved]

33-24-05-350. [Reserved]

33-24-05-351. [Reserved]

33-24-05-352. [Reserved]

33-24-05-353. [Reserved]

33-24-05-354. [Reserved]

33-24-05-355. [Reserved]

33-24-05-356. [Reserved]

33-24-05-357. [Reserved]

33-24-05-358. [Reserved]

33-24-05-359. [Reserved]

33-24-05-360. [Reserved]

33-24-05-361. [Reserved]

33-24-05-362. [Reserved]

33-24-05-363. [Reserved]

33-24-05-364. [Reserved]

33-24-05-365. [Reserved]

33-24-05-366. [Reserved]

33-24-05-367. [Reserved]

33-24-05-368. [Reserved]

33-24-05-369. [Reserved]

33-24-05-370. [Reserved]

33-24-05-371. [Reserved]

33-24-05-372. [Reserved]

33-24-05-373. [Reserved]

33-24-05-374. [Reserved]

33-24-05-375. [Reserved]

33-24-05-376. [Reserved]

33-24-05-377. [Reserved]

33-24-05-378. [Reserved]

33-24-05-379. [Reserved]

33-24-05-380. [Reserved]

33-24-05-381. [Reserved]

33-24-05-382. [Reserved]

33-24-05-383. [Reserved]

33-24-05-384. [Reserved]

33-24-05-385. [Reserved]

33-24-05-386. [Reserved]

33-24-05-387. [Reserved]

33-24-05-388. [Reserved]

33-24-05-389. [Reserved]

33-24-05-390. [Reserved]

33-24-05-391. [Reserved]

33-24-05-392. [Reserved]

33-24-05-393. [Reserved]

33-24-05-394. [Reserved]

33-24-05-395. [Reserved]

33-24-05-396. [Reserved]

33-24-05-397. [Reserved]

33-24-05-398. [Reserved]

33-24-05-399. [Reserved]

33-24-05-400. Applicability to air emission standards for process vents.

1. The regulations of sections 33-24-05-400 through 33-24-05-419 apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in section 33-24-05-01).

2. Except for subsections 4 and 5 of section 33-24-05-404, sections 33-24-05-400 through 33-24-05-419 apply to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least ten parts per million weight, if these operations are conducted in one of the following:

   a. A unit that is subject to the permitting requirements of chapter 33-24-06;

   b. A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of subsection 1 of section 33-24-03-12 (for example, a hazardous waste recycling unit that is not a ninety-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of chapter 33-24-06; or

   c. A unit that is exempt from permitting under the provisions of subsection 1 of section 33-24-03-12 (for example, a ninety-day tank or container) and is not a recycling unit under the provisions of section 33-24-02-06.

3. For the owner and operator of a facility subject to sections 33-24-05-400 through 33-24-05-419 and who received a final state-issued hazardous waste permit under article 33-24 prior to December 6, 1996, the requirements of section 33-24-05-400 through 33-24-05-419 shall be incorporated into the permit when the permit is reissued in accordance with the requirements of section 33-24-07-11 or reviewed in accordance with the requirements of subsection 1 of section 33-24-06-06. Until such date when the owner and operator receive a final state-issued hazardous waste permit incorporating the requirements of sections 33-24-05-400 through 33-24-05-419, the owner and operator are subject to the applicable requirements of subsection 5 of section 33-24-06-16.

   [Note: The requirements of sections 33-24-05-402 through 33-24-05-406 apply to process vents on hazardous waste recycling units previously exempt under subdivision a of subsection 3 of section 33-24-02-06. Other exemptions under section 33-24-02-04 and subsection 7 of section 33-24-05-01 are not affected by these requirements.]

4. [Reserved]

5. The requirements of sections 33-24-05-400 through 33-24-04-419 do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to sections 33-24-05-400 through 33-24-05-419 are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, 61, or 63. The documentation of compliance under regulations at 40 CFR part 60, 61, or 63 shall be kept with, or made readily available with, the facility operating record.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-401. Definitions.

As used in sections 33-24-05-400 through 33-24-05-419, all terms not defined herein have the meaning given in North Dakota Century Code chapter 23-20.3 and chapters 33-24-01 through 33-24-05 of this article.

1. "Air stripping operation" is a desorption operation employed to transfer one or more volatile components from a liquid mixture into a gas (air) either with or without the application of heat to the liquid. Pack towers, spray towers, and bubble-cap, sieve, or valve-type plate towers are among the process configurations used for contacting the air and a liquid.

2. "Bottoms receiver" means a container or tank used to receive and collect the heavier bottoms fractions of the distillation feed stream that remain in the liquid phase.

3. "Closed-vent system" means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

4. "Condenser" means a heat-transfer device that reduces a thermodynamic fluid from its vapor phase to its liquid phase.

5. "Connector" means flange, screwed, welded, or other joined fittings used to connect two pipelines or a pipeline and a piece of equipment. For the purposes of reporting and recordkeeping, "connector" means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.

6. "Continuous recorder" means a data-recording device recording an instantaneous data value at least once every fifteen minutes.

7. "Control device" means an enclosed combustion device vapor recovery system, or flare. Any device the primary function of which is the recovery or capture of solvent or other organic for use, reuse, or sale (e.g., a primary condenser on a solvent recovery unit) is not a control device.

8. "Control device shutdown" means the cessation of operation of a control device for any purpose.

9. "Distillate receiver" means a container or tank used to receive and collect liquid material (condensed) from the overhead condenser of a distillation unit and from which the condensed liquid is pumped to larger storage tanks or other process units.

10. "Distillation operation" means an operation, either batch or continuous separating one or more feed streams into two or more exit streams, each exit stream having component concentrations different from those in the feed streams. The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.

11. "Double-block and bleed system" means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

12. "Equipment" means each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any control devices or systems required by sections 33-24-05-400 through 33-24-05-419.

13. "First attempt at repair" means to take rapid action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

14. "Flame zone" means the portion of the combustion chamber in a boiler occupied by the flame envelope.

15. "Flow indicator" means a device that indicates whether gas flow is present in a vent stream.

16. "Fractionation operation" means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components.

17. "Hazardous waste management unit shutdown" means a work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit. An unscheduled work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit for less than twenty-four hours is not a hazardous waste management unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping operation are not hazardous waste management unit shutdowns.

18. "Hot well" means a container for collecting condensate as in a steam condenser serving a vacuum-jet or steam-jet ejector.

19. "In gas or vapor service" means that the piece of equipment contains or contacts a hazardous waste stream that is in the gaseous state at operating conditions.

20. "In heavy liquid service" means that the piece of equipment is not in gas or vapor service or in light liquid service.

21. "In light liquid service" means that the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the organic components in the stream is greater than three-tenths kilopascals at twenty degrees Celsius, the total concentration of the pure organic components having a vapor pressure greater than three-tenths kilopascals at twenty degrees Celsius is equal to or greater than twenty percent by weight, and the fluid is a liquid at operating conditions.

22. "In situ sampling systems" means nonextractive samplers or inline samplers.

23. "In vacuum service" means that equipment is operating at an internal pressure that is at least five kilopascals below ambient pressure.

24. "Malfunction" means any sudden failure of a control device or a hazardous waste management unit or failure of a hazardous waste management unit to operate in a normal or usual manner, so that organic emissions are increased.

25. "Open-ended valve or line" means any valve, except pressure release valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through open piping.

26. "Pressure release" means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure release device.

27. "Process heater" means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.

28. "Process vent" means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations.

29. "Repaired" means that equipment is adjusted, or otherwise altered, to eliminate a leak.

30. "Sampling connection system" means an assembly of equipment within a process or waste management unit used during periods of representative operation to take samples of the process of waste fluid. Equipment used to take nonroutine grab examples is not considered a sampling connection system.

31. "Sensor" means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

32. "Separator tank" means a device used for separation of two immiscible liquids.

33. "Solvent extraction operation" means an operation or method of separation in which a solid or solution is contacted with a liquid solvent (the two being mutually insoluble) to preferentially dissolve and transfer one or more components into the solvent.

34. "Start-up" means the setting in operation of a hazardous waste management unit or control device for any purpose.

35. "Steam stripping operation" means a distillation operation in which vaporization of the volatile constituents of a liquid mixture takes place by the introduction of steam directly into the charge.

36. "Surge control tank" means a large-sized pipe or storage reservoir sufficient to contain the surging liquid discharge of the process tank to which it is connected.

37. "Thin-film evaporation operation" means a distillation operation that employs a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical. Liquid is spread on the tube wall by a rotating assembly of blades that maintain a close clearance from the wall or actually ride on the film of liquid on the wall.

38. "Vapor incinerator" means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

39. "Vented" means discharged through an opening, typically an open-ended pipe or stack, allowing the passage of a stream of liquids, gases, or fumes into the atmosphere. The passage of liquids, gases, or fumes is caused by mechanical means such as compressors or vacuum-producing systems or by process-related means such as evaporation produced by heating and not caused by tank loading and unloading (working losses) or by natural means such as diurnal temperature changes.

History: Effective December 1, 1991; amended effective January 1, 1994; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-402. Standards - Process vents.

1. The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations of at least ten parts per million weight shall either:

   a. Reduce total organic emissions from all affected process vents at the facility below one and four-tenths kilograms/hour (three pounds per hour and two and eight-tenths megagrams/year (three and one-tenth tons/year); or

b. Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by ninety-five weight percent.

2. If the owner or operator installs a closed-vent system and control device to comply with the provisions of subsection 1, the closed-vent system and control device must meet the requirements of section 33-24-05-403.

3. Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests must conform with the requirements of subsection 3 of section 33-24-05-404.

4. When an owner or operator and the department do not agree on determinations of vent emissions or emission reductions, or both, or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the procedures in subsection 3 of section 33-24-05-404 must be used to resolve the disagreement.

History: Effective December 1, 1991; amended effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-403. Standards - Closed-vent systems and control devices.

1. Requirements for owners or operators of closed-vent systems and control devices.

a. Owners or operators of closed-vent systems and control devices used to comply with provisions of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819 shall comply with the provisions of this section.

b. For:

(1) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of sections 33-24-05-400 through 33-24-05-419 on the effective date that the facility becomes subject to the provisions of sections 33-24-05-400 through 33-24-05-419 must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to thirty months after the effective date that the facility becomes subject to sections 33-24-05-400 through 33-24-05-419 for installation and start-up.

(2) Any unit that begins operation after December 21, 1990, and is subject to the provisions of sections 33-24-05-400 through 33-24-05-419 when operation begins, must comply with the rules immediately (for example, must have control devices installed and operating on start-up of the affected unit); the thirty-month implementation schedule does not apply.

(3) The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to sections 33-24-05-400 through 33-24-05-419 shall comply with all requirements of sections 33-24-05-400 through 33-24-05-419 as soon as practicable but no later than thirty months after the amendment's effective date. When control equipment required by sections 33-24-05-400 through 33-24-05-419 cannot be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an

implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of onsite installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of sections 33-24-05-400 through 33-24-05-419. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(4) Owners and operators of facilities and units that become newly subject to the requirements of sections 33-24-05-400 through 33-24-05-419 after December 8, 1997, due to an action other than those described in paragraph 3 must comply with all applicable requirements immediately (for example, must have control devices installed and operating on the date the facility or unit becomes subject to sections 33-24-05-400 through 33-24-05-419; the thirty-month implementation schedule does not apply).

2. A control device involving vapor recovery (for example, a condenser or absorber) must be designed and operated to recover the organic vapors vented to it with an efficiency of ninety-five weight percent or greater unless the total organic emission limits of subdivision a of subsection 1 of section 33-24-05-402 for all affected process vents can be attained at an efficiency less than ninety-five weight percent.

3. An enclosed combustion device (for example, a vapor incinerator, boiler, or process heater) must be designed and operated to reduce the organic emissions vented to it by ninety-five weight percent or greater; to achieve a total organic compound concentration of twenty parts per million volume, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to three percent oxygen; or to provide a minimum residence time of fifty hundredths seconds at a minimum temperature of seven hundred sixty degrees Celsius. If a boiler or process heater is used as the control device, then the vent stream must be introduced into the flame zone of the boiler or process heater.

4. Flares.

a. A flare must be designed for and operated with no visible emissions as determined by the methods specified in subdivision a of subsection 5, except for periods not to exceed a total of five minutes during any two consecutive hours.

b. A flare must be operated with a flame present at all times, as determined by the methods specified in paragraph 3 of subdivision b of subsection 6.

c. A flare must be used only if the net heating value of the gas being combusted is eleven and two-tenths mega joules per standard cubic meter at standard conditions (three hundred British thermal units per standard cubic foot at standard conditions) or greater if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is seven and forty-five hundredths mega joules per cubic meter at standard conditions (two hundred British thermal units per standard cubic foot at standard conditions) or greater if the flare is nonassisted. The net heating value of the gas being combusted must be determined by the methods specified in subdivision b of subsection 5.

d. Steam-assisted or nonassisted flare.

(1) A steam-assisted or nonassisted flare must be designed for and operated with an exit velocity, as determined by the methods specified in subdivision c of

subsection 5, less than eighteen and three-tenths meters per second [sixty feet per second], except as provided in paragraphs 2 and 3.

(2) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subdivision c of subsection 5, equal to or greater than eighteen and three-tenths meters per second [sixty feet per second] but less than one hundred twenty-two meters per second [four hundred feet per second] is allowed if the net heating value of the gas being combusted is greater than thirty-seven and three-tenths mega joules per standard cubic meter at standard conditions [one thousand British thermal units per standard cubic foot at standard conditions].

(3) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subdivision c of subsection 5, less than the velocity V_{max} as determined by the method specified in subdivision d of subsection 5 and less than one hundred twenty-two meters per second [four hundred feet per second] is allowed.

e. An air-assisted flare must be designed and operated with an exit velocity less than the velocity V_{max} as determined by the method specified in subdivision e of subsection 5.

f. A flare used to comply with this section must be steam-assisted, air-assisted, or nonassisted.

5. Methods.

a. Referenced method 22 in 40 CFR part 60 must be used to determine the compliance of a flare with the visible emissions provisions of sections 33-24-05-400 through 33-24-05-419. The observation period is two hours and must be used according to method 22.

b. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \left[\sum_{i=1}^{n} C_i H_i \right]$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to 1 mol is 20 °C;

K = Constant, 1.74×10^{-7} (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is 20 °C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by reference method 18 in 40 CFR part 60 and measured for hydrogen and

carbon monoxide by ASTM D 1946-82 (incorporated by reference as specified in section 33-24-01-05); and

H_i = Net heat of combustion of sample component i, kcal/g mol at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (incorporated by reference as specified in section 33-24-01-05) if published values are not available or cannot be calculated.

c. The actual exit velocity of a flare must be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by reference methods 2, 2a, 2c, or 2d in 40 CFR part 60 as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

d. The maximum allowed velocity in meters per second V_{max} for a flare complying with paragraph 3 of subdivision d of subsection 4 must be determined by the following equation:

$$\log_{10} (V_{max}) = (H_T + 28.8)/31.7$$

where:

28.8 = constant,

31.7 = constant, and

H_T = the net heating value as determined in subdivision b.

e. The maximum allowed velocity in meters per second V_{max} for an air-assisted flare must be determined by the following equation:

$$V_{max} = 8.706 + 0.7084 (H_T)$$

where:

8.706 = constant,

0.7084 = constant, and

H_T = the net heating value as determined in subdivision b.

6. The owner or operator shall monitor and inspect each control device required to comply with this section to ensure proper operation and maintenance of the control device by implementing the following requirements:

a. Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor must be installed in the vent stream at the nearest feasible point to the control device inlet but before the point at which the vent streams are combined.

b. Install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor control device operation as specified below:

(1) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device must have an accuracy of plus or minus one percent of the temperature being monitored in Celsius or plus or minus five-tenths degrees Celsius, whichever is greater. The temperature sensor must be installed at a location in the combustion chamber downstream of the combustion zone.

(2) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device must be capable of monitoring temperature at two locations and have an accuracy of plus or minus one percent of the temperature being monitored in degrees Celsius or plus or minus five-tenths degrees Celsius, whichever is greater. One temperature sensor must be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor must be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(3) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

(4) A boiler or process heater having a design heat input capacity less than forty-four megawatts a temperature monitoring device equipped with a continuous recorder. The device must have an accuracy of plus or minus one percent of the temperature being monitored in degrees Celsius or plus or minus five-tenths degrees Celsius, whichever is greater. The temperature sensor must be installed at a location in the furnace downstream of the combustion zone.

(5) For a boiler or process heater having a design heat input capacity greater than or equal to forty-four megawatts a monitoring device equipped with a continuous recorder to measure a parameter that indicates good combustion operating practices are being used.

(6) For a condenser, either:

(a) A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds, the exhaust vent stream from the condenser; or

(b) A temperature monitoring device equipped with a continuous recorder. The device must be capable of monitoring temperature with an accuracy of plus or minus one percent of the temperature being monitored in degrees Celsius or plus or minus five-tenths degrees Celsius, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (for example, product side).

(7) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber either:

(a) A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed; or

(b) A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated in a regular predetermined time cycle.

c. Inspect the readings from each monitoring device required by subdivisions a and b at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of this section.

7. An owner or operator using a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon at a regular predetermined time interval that is

no longer than the carbon service life established as a requirement of subparagraph f of paragraph 3 of subdivision d of subsection 2 of section 33-24-05-405.

8. An owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis by using one of the following procedures:

   a. Monitor the concentration level of organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule, and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency must be daily or at an interval no greater than twenty percent of the time required to consume the total carbon working capacity established as a requirement of subparagraph g of paragraph 3 of subdivision d of subsection 2 of section 33-24-05-405, whichever is longer.

   b. Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of subparagraph g of paragraph 3 of subdivision d of subsection 2 of section 33-24-05-405.

9. An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

10. An owner or operator of an affected facility seeking to comply with the provisions of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819 by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system is required to develop documentation, including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

11. A closed-vent system shall meet either of the following design requirements:

    a. A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million volume above background as determined by the procedure in subsection 2 of section 33-24-05-404, and by visual inspections; or

    b. A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

12. The owner or operator shall monitor and inspect each closed-vent system required to comply with this section to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:

    a. Each closed-vent system that is used to comply with subdivision a of subsection 11 shall be inspected and monitored in accordance with the following requirements:

       (1) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this section. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in subsection 2 of section

33-24-05-404 to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million volume above background.

(2) After initial leak detection monitoring required in paragraph 1, the owner or operator shall inspect and monitor the closed-vent system as follows:

(a) Closed-vent system joints, seams, or other connections that are permanently or semipermanently sealed (for example, a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in subsection 2 of section 33-24-05-404 to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (for example, a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (for example, a flange is unbolted).

(b) Closed-vent system components or connections other than those specified in subparagraph a shall be monitored annually and at other times as requested by the department, except as provided for in subsection 15, using the procedures specified in subsection 2 of section 33-24-05-404 to demonstrate that the components or connections operate with no detectable emissions.

(3) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of subdivision c.

(4) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in section 33-24-05-405.

b. Each closed-vent system that is used to comply with subdivision b of subsection 11 shall be inspected and monitored in accordance with the following requirements:

(1) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in duct work or piping or loose connections.

(2) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year.

(3) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of subdivision c.

(4) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in section 33-24-05-405.

c. The owner or operator shall repair all detected defects as follows:

(1) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than five hundred parts per million volume above background, shall be controlled as soon as practicable, but not later than fifteen calendar days after the emission is detected, except as provided for in paragraph 3.

(2) A first attempt at repair shall be made no later than five calendar days after the emission is detected.

(3) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.

(4) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in section 33-24-05-405.

13. Closed-vent systems and control devices used to comply with provisions of sections 33-24-05-400 through 33-24-05-419 must be operated at all times when emissions may be vented to them.

14. The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon:

a. Regenerated or reactived in a thermal treatment unit that meets one of the following:

(1) The owner or operator of the unit has been issued a final permit under chapter 33-24-06 which implements the requirements of sections 33-24-05-300 through 33-24-05-309; or

(2) The unit is equipped with operating air emission controls in accordance with the applicable requirements of sections 33-24-05-400 through 33-24-05-419 and sections 33-24-05-450 through 33-24-05-474 or the applicable requirements of subsection 5 of section 33-24-06-16; or

(3) The unit is equipped with operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR part 61 or 40 CFR part 63.

b. Incinerated in a hazardous waste incinerator for which the owner or operator either:

(1) Has been issued a final permit under chapter 33-24-06 which implements the requirements of sections 33-24-05-144 through 33-24-05-159; or

(2) Has designed and operates the incinerator in accordance with the applicable interim status requirements of subsection 5 of section 33-24-06-16.

c. Burned in a boiler or industrial furnace for which the owner or operator either:

(1) Has been issued a final permit under chapter 33-24-06 which implements the requirements of sections 33-24-05-525 through 33-24-05-549; or

(2) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of sections 33-24-05-525 through 33-24-05-549.

15. Any components of a closed-vent system that are designated, as described in subdivision i of subsection 3 of section 33-24-05-405, as unsafe to monitor are exempt from the requirements of subparagraph b of paragraph 2 of subdivision a of subsection 12 if:

a. The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be

exposed to an immediate danger as a consequence of complying with subparagraph b of paragraph 2 of subdivision a of subsection 12; and

b. The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedures specified in subparagraph b of paragraph 2 of subdivision a of subsection 12 as frequently as practicable during safe-to-monitor times.

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General Authority: NDCC 23-20.3-03
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33-24-05-404. Test methods and procedures.

1. Each owner or operator subject to the provisions of sections 33-24-05-400 through 33-24-05-419 shall comply with the test methods and procedures requirements provided in this section.

2. When a closed-vent system is tested for compliance with no detectable emissions, as required in subsection 12 of section 33-24-05-403, the test must comply with the following requirements:

   a. Monitoring must comply with referenced method 21 in 40 CFR part 60.

   b. The detection instrument must meet the performance criteria of reference method 21.

   c. The instrument must be calibrated before use on each day of its use by the procedures specified in reference method 21.

   d. Calibration gases must be:

      (1) Zero air (less than ten parts per million hydrocarbon in air).

      (2) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten thousand parts per million methane or n-hexane.

   e. The background level must be determined as set forth in reference method 21.

   f. The instrument probe must be traversed around all potential leak interfaces as close to the interface as possible as described in reference method 21.

   g. The arithmetic difference between the maximum concentration indicated by the instrument and background level is compared with five hundred parts per million for determining compliance.

3. Performance tests to determine compliance with subsection 1 of section 33-24-05-402 and with the total organic compound concentration limit of subsection 3 of section 33-24-05-403 must comply with the following:

   a. Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices must be conducted and data reduced in accordance with the following reference methods and calibration procedures:

      (1) Method 2 in 40 CFR part 60 for velocity and volume flow rate.

      (2) Method 18 or Method 25A in 40 CFR part 60, appendix A, for organic content. If Method 25A is used, the organic hazardous air pollutant used as the calibration gas

must be the single organic hazardous air pollutant representing the largest percent by volume of the emissions. The use of Method 25A is acceptable if the response from the high-level calibration gas is at least twenty times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(3) Each performance test must consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs apply. The average must be computed on a time-weighted basis.

(4) Total organic mass flow rates must be determined by the following equation:

(a) For sources utilizing method 18.

$$E_h = Q_{2sd}\left[\sum_{i=1}^{n} C_i MW_i\right][0.0416]\ [10^{-6}]$$

where:

E_h = Total organic mass flow rate, kg/h;

Q_{2sd} = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

n = Number of organic compounds in the vent gas;

C_i = Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18;

MW_i = Molecular weight of organic compound i in the vent gas, kg/kg-mol;

0.0416 = Conversion factor for molar volume, kg-mol/m^3 (@293K and 760 mm Hg); and

10^{-6} = Conversion from ppm.

(b) For sources utilizing method 25A.

$E_h = (Q)(C)(MW)(0.0416)(10^{-6})$

Where:

E_h = Total organic mass flow rate, kg/h;

Q = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

C = Organic concentration in ppm, dry basis, as determined by Method 25A;

MW = Molecular weight of propane, 44;

0.0416 = Conversion factor for molar volume, kg-mol/m^3 (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm.

(5) The annual total organic emission rate must be determined by the following equation:

$E_A = (E_h)(H)$

where:

E_A = Total organic mass emission rate, kg/y;

E_h = Total organic mass flow rate for the process vent, kg/h;

H = Total annual hours of operations for the affected unit, h.

(6) Total organic emissions from all affected process vents at the facility must be determined by summing the hourly total organic mass emission rates (E_h as determined in paragraph 4) and by summing the annual total organic mass emission rates (E_A, as determined in paragraph 5) for all affected process vents at the facility.

b. The owner or operator shall record such process information as may be necessary to determine the conditions of the performance test. Operations during periods of startup, shutdown, and malfunction do not constitute representative conditions for the purpose of a performance test.

c. The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(1) Sampling ports adequate for the test methods specified in subdivision a .

(2) Safe sampling platforms.

(3) Safe access to sampling platforms.

(4) Utilities for sampling and testing equipment.

d. For the purpose of making compliance determinations, the time-weighted average of the results of the three runs applies. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of force shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner's or operator's control, compliance may, upon the department's approval, be determined using the average of the results of the two other runs.

4. To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of sections 33-24-05-400 through 33-24-05-419, the owner or operator must make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than ten parts per million weight using one of the following two methods:

a. Direct measurement of the organic concentration of the waste using the following procedures:

(1) The owner or operator must take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

(2) For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

(3) Each sample must be analyzed and the total organic concentration of the sample must be computed using method 9060A (incorporated by reference under section 33-24-01-05) of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," environmental protection agency publication SW-846 or analyzed for its individual organic constituents.

(4) The arithmetic mean of the results of the analysis of the four samples applies for each waste stream managed in the unit in determining the time-weighted annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.

b. Using knowledge of the waste to determine that its total organic concentration is less than ten parts per million weight. Documentation of the waste determination is required. Examples of documentation that must be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than ten parts per million weight, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

5. The determination that distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted, annual average total organic concentrations less than ten parts per million weight must be made as follows:

a. By the effective date that the facility becomes subject to the provisions of sections 33-24-05-400 through 33-24-05-419 or by the date when the waste is first managed in a waste management unit, whichever is later; and

b. For continuously generated waste, annually; or

c. Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

6. When an owner or operator and the department do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least ten parts per million weight based on knowledge of the waste, the dispute may be resolved by using direct measurement as specified at subdivision a of subsection 4.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-405. Recordkeeping requirements.

1. Applicability.

   a. Each owner or operator subject to the provisions of sections 33-24-05-400 through 33-24-05-419 shall comply with the recordkeeping requirements of this section.

   b. An owner or operator of more than one hazardous waste management unit subject to the provisions of sections 33-24-05-400 through 33-24-05-419 may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

2. Owners and operators must record the following information in the facility operating record:

   a. For facilities that comply with the provisions of subdivision b of subsection 1 of section 33-24-05-403, an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule must also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule must be in the facility operating record by the effective date that the facility becomes subject to the provisions of sections 33-24-05-400 through 33-24-05-419.

   b. Up-to-date documentation of compliance with the process vent standards in section 33-24-05-402, including:

      (1) Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent, and for the overall facility, namely, the total emissions for all affected vents at the facility, and the approximate location within the facility of each affected unit, for example, identifying the hazardous waste management units on a facility plot plan.

      (2) Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculation or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions must be made using operating parameter values, for example, temperatures, flow rates, or vent stream organic compounds and concentrations, that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action, for example, managing a waste of different composition or increasing operating hours of affected waste management units, that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.

   c. Where an owner or an operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan must include:

      (1) A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This must include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.

(2) A detailed engineering description of the closed-vent system and control device, including:

(a) Manufacturer's name and model number of control device.

(b) Type of control device.

(c) Dimensions of the control device.

(d) Capacity.

(e) Construction materials.

(3) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

d. Documentation of compliance with section 33-24-05-403 must include the following information:

(1) A list of all information references and sources used in preparing the documentation.

(2) Records, including the dates, of each compliance test required by subsection 11 of section 33-24-05-403.

(3) If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "Apti course 415: control of gaseous emissions" (incorporated by reference as specified in section 33-24-01-05) or other engineering texts acceptable to the department that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with subparagraphs a through g may be used to comply with this requirement. The design analysis must address the vent stream characteristics and control device operation parameters as specified below:

(a) For a thermal vapor incinerator, the design analysis must consider the vent stream composition, constituent concentrations, and flow rate. The design analysis must also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(b) For a catalytic vapor incinerator, the design analysis must consider the vent stream composition, constituent concentrations, and flow rate. The design analysis must also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(c) For a boiler or process heater, the design analysis must consider the vent stream composition, constituent concentrations, and flow rate. The design analysis must also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of methods and location where the vent stream is introduced into the combustion zone.

(d) For a flare, the design analysis must consider the vent stream composition, constituent concentration, and flow rate. The design analysis must also consider the requirements specified in subsection 4 of section 33-24-05-403.

(e) For a condenser, the design analysis must consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis must also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and design average temperatures of the coolant fluid at the condenser inlet and outlet.

(f) For a carbon adsorption system such as a fixed-bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis must consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis must also establish the design exhaust vent stream organic compound concentration level, the number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling or drying cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(g) For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis must consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis must also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(4) A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

(5) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of ninety-five percent or greater unless the total organic concentration limit of subsection 1 of section 33-24-05-402 is achieved at an efficiency less than ninety-five weight percent or the total organic emission limits of subsection 1 of section 33-24-05-402 for affected process vents at the facility can be obtained by a control device involving vapor recovery at an efficiency less than ninety-five weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

(6) If performance tests are used to demonstrate compliance, all test results.

3. Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of sections 33-24-05-400 through 33-24-05-419 must be recorded and up to date in the facility operating record. The information must include:

a. Description and date of each modification that is made to the closed-vent system or control device design.

b. Identification of operating parameters, description of monitoring device, and diagram of monitoring sensor location or locations used to comply with subdivisions a and b of subsection 6 of section 33-24-05-403.

c. Monitoring, operating, and inspection information required by subsections 6 through 11 of section 33-24-05-403.

d. Date, time, and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as specified below:

(1) For a thermal vapor incinerator designed to operate with a minimum residence time of fifty hundredths seconds at a minimum temperature of seven hundred sixty degrees Celsius, period when the combustion temperature is below seven hundred sixty degrees Celsius.

(2) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of ninety-five weight percent or greater, period when the combustion zone temperature is more than twenty-eight degrees Celsius below the designed average combustion zone temperature established as a requirement of subparagraph a of paragraph 3 of subdivision d of subsection 2.

(3) For a catalytic vapor incinerator, period when:

(a) Temperature of the vent stream at the catalytic bed inlet is more than twenty-eight degrees Celsius below the average temperature of the inlet vent stream established as a requirement of subparagraph b of paragraph 3 of subdivision d of subsection 2; or

(b) Temperature difference across the catalyst bed is less than eighty percent of the design average temperature difference established as a requirement of subparagraph b of paragraph 3 of subdivision d of subsection 2.

(4) For a boiler or process heater, period when:

(a) Flame zone temperature is more than twenty-eight degrees Celsius below the design average flame zone temperature established as a requirement of subparagraph c of paragraph 3 of subdivision d of subsection 2; or

(b) Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of subparagraph c of paragraph 3 of subdivision d of subsection 2.

(5) For a flare, period when the pilot flame is not ignited.

(6) For a condenser that complies with subparagraph a of paragraph 6 of subdivision b of subsection 6 of section 33-24-05-403, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than twenty percent greater than the design outlet organic compound concentration level established as a requirement of subparagraph e of paragraph 3 of subdivision d of subsection 2.

(7) For a condenser that complies with subparagraph b of paragraph 6 of subdivision b of subsection 6 of section 33-24-05-403, period when:

(a) Temperature of the exhaust vent stream from the condenser is more than six degrees Celsius above the design average exhaust vent stream temperature established as a requirement of subparagraph e of paragraph 3 of subdivision d of subsection 2; or

(b) Temperature of the coolant fluid exiting the condenser is more than six degrees Celsius above the design average coolant fluid temperature at the condenser outlet established as a requirement of subparagraph e of paragraph 3 of subdivision d of subsection 2.

(8) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates carbon bed directly onsite in the control device and complies with subparagraph a of paragraph 7 of subdivision b of subsection 6 of section 33-24-05-403, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than twenty percent greater than the design exhaust vent stream organic compound concentration level established as a requirement of subparagraph f of paragraph 3 of subdivision d of subsection 2.

(9) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with subparagraph b of paragraph 7 of subdivision b of subsection 6 of section 33-24-05-403, period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of subparagraph f of paragraph 3 of subdivision d of subsection 2.

e. Explanation for each period recorded under subdivision d of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.

f. For a carbon adsorption system operated subject to requirements specified in subsection 7 of section 33-24-05-403 or subdivision b of subsection 8 of section 33-24-05-403, date when existing carbon in the control device is replaced with fresh carbon.

g. For a carbon adsorption system operated subject to requirements specified in subdivision a of subsection 8 of section 33-24-05-403, a log that records:

(1) Date and time when control device is monitored for carbon breakthrough and the monitoring device reading.

(2) Date when existing carbon in the control device is replaced with fresh carbon.

h. Date of each control device startup and shutdown.

i. An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to subsection 15 of section 33-24-05-403 shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of subsection 15 of section 33-24-05-403, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.

j. When each leak is detected as specified in subsection 12 of section 33-24-05-403, the following information shall be recorded:

(1) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number;

(2) The date the leak was detected and the date of first attempt to repair the leak;

(3) The date of successful repair of the leak;

(4) Maximum instrument reading measured by method 21 of 40 CFR part 60, appendix A, after it is successfully repaired or determined to be nonrepairable; and

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within fifteen calendar days after discovery of the leak:

(a) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(b) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked onsite before depletion and the reason for depletion.

4. Records of the monitoring, operating, and inspection information required by subdivisions c through j of subsection 3 must be maintained by the owner or operator for at least three years following the date of each occurrence, measurement, maintenance, corrective action, or record.

5. For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the department will specify the appropriate recordkeeping requirements.

6. Up to date information and data used to determine whether or not a process vent is subject to the requirements in section 33-24-05-402, including supporting documentation as required by subdivision b of subsection 4 of section 33-24-05-404 when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, must be recorded in a log that is kept in the facility operating record.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-406. Reporting requirements.

1. A semiannual report must be submitted by owners and operators subject to the requirements of sections 33-24-05-400 through 33-24-05-419 to the department by dates specified by the department. The report must include the following information:

   a. The identification number, name, and address of the facility.

   b. For each month during the semiannual reporting period, dates when the control device exceeded or operated outside of the design specifications as defined in subdivision d of subsection 3 of section 33-24-05-405 and as indicated by the control device monitoring required by subsection 6 of section 33-24-05-403 and such exceedances were not corrected within twenty-four hours, or that a flare operated with visible emissions as designed in subsection 4 of section 33-24-05-03 and as determined by method 22 monitoring, the duration and cause of each exceedance or visible emission, and any corrective measures taken.

2. If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in subdivision d of subsection 3 of section 33-24-05-405 for more than twenty-four hours or a flare does not operate with visible emissions as defined in subsection 4 of section 33-24-05-403, a report to the department is not required.

History: Effective December 1, 1991; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-407. [Reserved]

33-24-05-408. [Reserved]

33-24-05-409. [Reserved]

33-24-05-410. [Reserved]

33-24-05-411. [Reserved]

33-24-05-412. [Reserved]

33-24-05-413. [Reserved]

33-24-05-414. [Reserved]

33-24-05-415. [Reserved]

33-24-05-416. [Reserved]

33-24-05-417. [Reserved]

33-24-05-418. [Reserved]

33-24-05-419. [Reserved]

33-24-05-420. Applicability to air emission standards for equipment leaks.

1. The regulations in sections 33-24-05-420 through 33-24-05-449 apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in section 33-24-05-01).

2. Except as provided in subsection 11 of section 33-24-05-434, sections 33-24-05-420 through 33-24-05-449 apply to equipment that contains or contacts hazardous waste with organic concentrations of at least ten percent by weight that are managed in one of the following:

   a. A unit that is subject to the permitting requirements of chapter 33-24-06;

   b. A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of subsection 1 of section 33-24-03-12 (for example, a hazardous waste recycling unit that is not a ninety-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of chapter 33-24-06; or

c. A unit that is exempt from permitting under the provisions of subsection 1 of section 33-24-03-12 (for example, a ninety-day tank or container) and is not a recycling unit under the provisions of section 33-24-02-06.

3. For the owner or operator of a facility subject to sections 33-24-05-420 through 33-24-05-449 and who received a final state-issued hazardous waste permit under article 33-24 prior to December 6, 1996, the requirements of sections 33-24-05-420 through 33-24-05-449 shall be incorporated into the permit when the permit is reissued in accordance with the requirements of section 33-24-07-11 or reviewed in accordance with the requirements of section 33-24-06-06. Until such date when the owner or operator receives a final state-issued hazardous waste permit incorporating the requirements of sections 33-24-05-420 through 33-24-05-449, the owner or operator is subject to the applicable requirements of subsection 5 of section 33-24-06-16.

4. Each piece of equipment to which sections 33-24-05-420 through 33-24-05-449 apply must be marked in such a manner that it can be distinguished readily from other pieces of equipment.

5. Equipment that is in vacuum service is excluded from the requirements of sections 33-24-05-422 to 33-24-05-430 if it is identified as required in subdivision e of subsection 7 of section 33-24-05-434.

6. Equipment that contains or contacts hazardous waste with an organic concentration of at least ten percent by weight for less than three hundred hours per calendar year is excluded from the requirements of sections 33-24-05-422 through 33-24-05-430 if it is identified as required in subdivision f of subsection 7 of section 33-24-05-434.

7. Purged coatings and solvents from surface coating operations subject to the national emission standards for hazardous air pollutants (NESHAP) for the surface coating of automobiles and light-duty trucks at 40 CFR part 63, subpart IIII, are not subject to the requirements of sections 33-24-05-420 through 33-24-05-449.

   [Note: The requirements of sections 33-24-05-422 through 33-24-05-435 apply to equipment associated with hazardous waste recycling units previously exempt under subdivision a of subsection 3 of section 33-24-02-06. Other exemptions under section 33-24-02-04 and subsection 7 of section 33-24-05-01 are not affected by these requirements.]

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-421. Definitions as used in sections 33-24-05-420 through 33-24-05-449.

All terms have the meaning given them in section 33-24-05-401, chapter 23-20.3, and chapters 33-24-01 through 33-24-05.

History: Effective December 1, 1991; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-422. Standards - Pumps in light liquid service.

1. Timeframe.

   a. Each pump in light liquid service must be monitored monthly to detect leaks by the method specified in subsection 2 of section 33-24-05-433, except as provided in subsections 4, 5, and 6.

b. Each pump in light liquid service must be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

2. Indicators.

a. If an instrument reading of ten thousand parts per million or greater is measured, a leak is detected.

b. If there are indications of liquids dripping from the pump seal, a leak is detected.

3. Response.

a. When a leak is detected, it must be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 33-24-05-429.

b. A first attempt at repair (for example, tightening the packing gland) must be made no later than five calendar days after each leak is detected.

4. Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of subsection 1, provided the following requirements are met:

a. Each dual mechanical seal system must be:

(1) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure;

(2) Equipped with a barrier fluid degasing reservoir that is connected by a closed-vent system to a control device that complies with requirements of section 33-24-05-430; or

(3) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

b. The barrier fluid system must not be a hazardous waste with organic concentrations ten percent or greater by weight.

c. Each barrier fluid system must be equipped with a sensor that will detect failure of the sealed system, the barrier fluid system, or both.

d. Each pump must be checked by visual inspection each calendar week for indications of liquids dripping from the pump seals.

e. Checks.

(1) Each sensor as described in subdivision c must be checked daily or be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly.

(2) The owner or operator must determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

f. Leaks.

(1) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion determined in paragraph 2 of subdivision e, a leak is detected.

(2) When a leak is detected it must be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 33-24-05-429.

(3) A first attempt at repair (for example, relapping the seal) must be made no later than five calendar days after each leak is detected.

5. Any pump that is designated, as described in subdivision b of subsection 7 of section 33-24-05-434, for no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million above background, is exempt from the requirements of subsections 1, 3, and 4 if the pump meets the following requirements:

   a. Must have no externally actuated shaft penetrating the pump housing.

   b. Must operate with no detectable emissions as indicated by an instrument reading of less than five hundred parts per million above background as measured by the methods specified in subsection 3 of section 33-24-05-433.

   c. Must be tested for compliance with subdivision b initially upon designation, annually, and at other times as requested by the department.

6. If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of section 33-24-05-430, it is exempt from the requirements of subsections 1 through 5.

History: Effective December 1, 1991; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-423. Standards - Compressors.

1. Each compressor must be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in subsections 8 and 9.

2. Each compressor seal system as required in subsection 1 must be:

   a. Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure;

   b. Equipped with the barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of section 33-24-05-430; or

   c. Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.

3. The barrier fluid must not be a hazardous waste with organic concentrations ten percent or greater by weight.

4. Each barrier fluid system as described in subsections 1 through 3 must be equipped with a sensor that would detect failure of the sealed system, barrier fluid system, or both.

5. Checks.

   a. Each sensor as required in subsection 4 must be checked daily or must be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plantsite, in which case the sensor must be checked daily.

b. The owner or operator shall determine, based on design consideration and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

6. If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion determined under subdivision b of subsection 5, a leak is detected.

7. Leaks.

   a. When a leak is detected, it must be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 33-24-05-429.

   b. A first attempt at repair, for example, tightening the packing gland, must be made no later than five calendar days after each leak is detected.

8. A compressor is exempt from the requirements of subsections 1 and 2 if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of section 33-24-05-430 except as provided in subsection 9.

9. Any compressor that is designed, as described in subdivision b of subsection 7 of section 33-24-05-434, for no detectable emissions as indicated by an instrument reading of less than five hundred parts per million above background is exempt from the requirements of subsections 1 through 8 if the compressor:

   a. Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million above background, as measured by the method specified in subsection 3 of section 33-24-05-433.

   b. Is tested for compliance with subdivision a of subsection 9 initially upon designation, annually, and other times as requested by the department.

History: Effective December 1, 1991; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-424. Standards - Pressure relief devices in gas or vapor service.

1. Except during pressure releases, each pressure relief device in gas or vapor service must be operated with no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million above background, as measured by the method specified in subsection 3 of section 33-24-05-433.

2. Pressure release.

   a. After each pressure release, the pressure relief device must be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million above background, as soon as practicable, but no later than five calendar days after each pressure release, except as provided in section 33-24-05-429.

   b. No later than five calendar days after the pressure release, the pressure relief device must be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million above background, as measured by the method specified in subsection 3 of section 33-24-05-433.

3. Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in section 33-24-05-430 is exempt from the requirements of subsections 1 and 2.

History: Effective December 1, 1991; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.03-04

33-24-05-425. Standards - Sampling connection systems.

1. Each sampling connection system must be equipped with a closed-purge, closed-loop, or closed-vent system. This system must collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.

2. Each closed-purge, closed-loop, or closed-vent system as required in subsection 1 must meet one of the following requirements:

   a. Return the purged process fluid directly to the process line;

   b. Collect and recycle the purged process fluid; or

   c. Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of sections 33-24-05-454 through 33-24-05-456 or a control device that complies with the requirements of section 33-24-05-430.

3. In situ sampling systems and sampling systems without purges are exempt from the requirements of subsections 1 and 2.

History: Effective December 1, 1991; amended effective July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-426. Standards - Open-ended valves or lines.

1. Requirements.

   a. Each open-ended valve or line must be equipped with a cap, blind flange, plug, or a second valve.

   b. The cap, blind flange, plug, or second valve must seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line.

2. Each open-ended valve or line equipped with a second valve must be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.

3. When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but must comply with subsection 1 at all other times.

History: Effective December 1, 1991.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-427. Standards - Valves in gas or vapor service or in light liquid service.

1. Each valve in gas or vapor or light liquid service must be monitored monthly to detect leaks by the methods specified in subsection 2 of section 33-24-05-433 and must comply with subsections 2 through 5, except as provided in subsections 6, 7, and 8 and sections 33-24-05-431 and 33-24-05-432.

2. If an instrument reading of ten thousand parts per million or greater is measured, a leak is detected.

3. Timeframe.

   a. Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

   b. If a leak is detected, the valve must be monitored monthly until a leak is not detected for two successive months.

4. Release.

   a. When a leak is detected, it must be repaired as soon as practicable, but no later than fifteen calendar days after the leak is detected, except as provided in section 33-24-05-429.

   b. A first attempt at repair must be made no later than five calendar days after each leak is detected.

5. First attempts at repair include, but are not limited to, the following best practices where applicable:

   a. Tightening of bonnet bolts.

   b. Replacement of bonnet bolts.

   c. Tightening of packing gland nuts.

   d. Injection of lubricant into lubricated packing.

6. Any valve that is designated, as described in subdivision b of subsection 7 of section 33-24-05-434, for no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million above background, is exempt from the requirements of subsection 1 if the valve:

   a. Has no external actuating mechanism in contact with the hazardous waste stream.

   b. Is operated with emissions less than five hundred parts per million above background as determined by the methods specified in subsection 3 of section 33-24-05-433.

   c. Is tested for compliance with subdivision b initially upon designation, annually, and at other times as requested by the department.

7. Any valve that is designated, as described in subdivision a of subsection 8 of section 33-24-04-434 as an unsafe-to-monitor valve is exempt from the requirements of subsection 1 if:

a. The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with subsection 1.

b. The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

8. Any valve that is designated as described in subdivision b of subsection 8 of section 33-24-05-434, as a difficult-to-monitor valve is exempt from the requirements of subsection 1 if:

a. The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than two meters above a support surface.

b. The hazardous waste management unit within which the valve is located was in operation before June 21, 1990.

c. The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

History: Effective December 1, 1991; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-428. Standards - Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors.

1. Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors must be monitored within five days by the method specified in subsection 2 of section 33-24-05-433 if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.

2. If an instrument reading of ten thousand parts per million or greater is measured, a leak is detected.

3. Timeframe.

a. When a leak is detected, it must be repaired as soon as practicable, but not later than fifteen calendar days after it is detected, except as provided in section 33-24-05-429.

b. The first attempt at repair must be made no later than five calendar days after each leak is detected.

4. First attempts at repair include, but are not limited to, the best practices described under subsection 5 of section 33-24-05-427.

5. Any connector that is inaccessible or is ceramic or ceramic-lined (for example, porcelain, glass, or glass-lined) is exempt from the monitoring requirements of subsection 1 and from the recordkeeping requirements of section 33-24-05-434.

History: Effective December 1, 1991; amended effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-429. Standards - Delay of repair.

1. Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically unfeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment must occur before the end of the next hazardous waste management unit shutdown.

2. Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations of at least ten percent by weight.

3. Delay of repair for valves will be allowed if:

   a. The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.

   b. When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with section 33-24-05-430.

4. Delay of repair for pumps will be allowed if:

   a. Repair requires the use of a dual mechanical seal system that includes a barrier fluid system.

   b. Repair is completed as soon as practicable, but not later than six months after the leak was detected.

5. Delay of repair beyond a hazardous waste management unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than six months after the first hazardous waste management unit shutdown.

History: Effective December 1, 1991.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-430. Standards - Closed-vent systems and control devices.

1. Owners and operators of closed-vent systems and control devices subject to sections 33-24-05-420 through 33-24-05-449 shall comply with the provisions of section 33-24-05-403.

2. For:

   a. The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of sections 33-24-05-420 through 33-24-05-449 on the effective date that the facility becomes subject to the provisions of sections 33-24-05-420 through 33-24-05-449 must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to thirty months after the effective date that the facility becomes subject to sections 33-24-05-420 through 33-24-05-449 for installation and start-up.

b. Any unit that begins operation after December 21, 1990, and is subject to the provisions of sections 33-24-05-420 through 33-24-05-449 when operation begins, must comply with the rules immediately (for example, must have control devices installed and operating on start-up of the affected unit); the thirty-month implementation schedule does not apply.

c. The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to sections 33-24-05-420 through 33-24-05-449 shall comply with all requirements of sections 33-24-05-420 through 33-24-05-449 as soon as practicable but no later than thirty months after the amendment's effective date. When control equipment required by sections 33-24-05-420 through 33-24-05-449 cannot be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of onsite installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of sections 33-24-05-420 through 33-24-05-449. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

d. Owners and operators of facilities and units that become newly subject to the requirements of sections 33-24-05-420 through 33-24-05-449 after December 8, 1997, due to an action other than those described in subdivision c must comply with all applicable requirements immediately (for example, must have control devices installed and operating on the date the facility or unit becomes subject to sections 33-24-05-420 through 33-24-05-449; the thirty-month implementation schedule does not apply).

History: Effective December 1, 1991; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-431. Alternative standards for valves in gas or vapor service or light liquid service - Percentage of valves allowed to leak.

1. An owner or operator subject to the requirements of section 33-24-05-427 may elect to have all valves within a hazardous waste management unit comply with an alternative standard that allows no greater than two percent of the valves to leak.

2. The following requirements must be met if an owner or operator decides to comply with the alternative standard of allowing two percent of valves to leak:

   a. A performance test as specified in subsection 3 must be conducted initially upon designation, annually, and at other times requested by the department.

   b. If a valve leak is detected, it must be repaired in accordance with subsections 4 and 5 of section 33-24-05-427.

3. Performance tests must be conducted in the following manner:

   a. All valves subject to requirements in section 33-24-05-427 within the hazardous waste management unit shall be monitored within one week by the methods specified in subsection 2 of section 33-24-05-433.

   b. If an instrument reading of ten thousand parts per million or greater is measured, a leak is detected.

c. The leak percentage must be determined by dividing the number of valves subject to the requirements in section 33-24-05-427 for which leaks are detected by the total number of valves subject to the requirements in section 33-24-05-427 within the hazardous waste management unit.

History: Effective December 1, 1991; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-432. Alternative standard for valves in gas or vapor service or in light liquid service - Skip period leak detection and repair.

1. An owner or operator subject to the requirements of section 33-24-05-427 may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in subdivisions b and c of subsection 2.

2. **Requirements.**

   a. An owner or operator shall comply with the requirements for valves, as described in section 33-24-05-427, except as described in subdivisions b and c.

   b. After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than two percent, an owner or operator may begin to skip one of the quarterly leak detection periods (for example, monitor for leaks once every six months) for the valves subject to the requirements in section 33-24-05-427.

   c. After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than two percent, an owner or operator may begin to skip three of the quarterly leak detection periods (for example, monitor for leaks once every year) for the valves subject to the requirements in section 33-24-05-427.

   d. If the percentage of valves leaking is greater than two percent, the owner or operator shall monitor monthly in compliance with the requirements in section 33-24-05-427, but may again elect to use this section after meeting the requirements of subdivision a of subsection 3 of section 33-24-05-427.

History: Effective December 1, 1991; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-433. Test methods and procedures.

1. Each owner or operator subject to the provisions of sections 33-24-05-420 through 33-24-05-449 shall comply with the test methods and procedures requirements provided in this section.

2. Leak detection monitoring, as required in sections 33-24-05-422 through 33-24-05-432, must comply with the following requirements:

   a. Monitoring must comply with reference method 21 in 40 CFR part 60.

   b. The detection instrument must meet the performance criteria of reference method 21.

   c. The instrument must be calibrated before use on each day of its use by the procedures specified in reference method 21.

   d. Calibration gas must be:

(1) Zero air (less than ten parts per million of hydrocarbon in air).

(2) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten thousand parts per million methane or n-hexane.

e. The instrument probe must be traversed around all potential leak interfaces as close to the interface as possible as described in reference method 21.

3. When equipment is tested for compliance with no detectable emissions, as required in subsection 5 of section 33-24-05-422, subsection 9 of section 33-24-05-423, section 33-24-05-424, and subsection 6 of section 33-24-05-427, the test must comply with the following requirements:

a. The requirements of subdivisions a through d of subsection 2 apply.

b. The background level must be determined as set forth in reference method 21.

c. The instrument probe must be traversed around all potential leak interfaces as close to the interface as possible as described in reference method 21.

d. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with five hundred parts per million for determining compliance.

4. In accordance with the waste analysis plan required by subsection 2 of section 33-24-05-04, an owner or operator of the facility must determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds ten percent by weight using the following:

a. Methods described in American society for testing and materials methods D2267-88, E169-87, E168-88, E260-85 (incorporated by reference under section 33-24-01-05);

b. Method 9060A (incorporated by reference under section 33-24-01-05) of "Test Methods for Evaluating Solid Waste," environmental protection agency publication SW-846, for computing total organic concentration of the sample, or analyzed for its individual organic constituents; or

c. Application of the knowledge of the nature of the hazardous waste stream or process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that must be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than ten percent, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

5. If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least ten percent by weight, the determination can be revised only after following the procedures in subdivision a or b of subsection 4.

6. When an owner or operator and the department do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least ten percent by weight, the procedures in subdivision a or b of subsection 4 can be used to resolve the dispute.

7. Samples used in determining the percent organic content must be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.

8. To determine if pump or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by American society for testing and materials D-2879-86 (incorporated by reference under section 33-24-01-05).

9. Performance tests to determine if control device achieves ninety-five weight percent organic emission reduction shall comply with the procedures of subdivisions a through d of subsection 3 of section 33-24-05-404.

History: Effective December 1, 1991; amended effective January 1, 1994; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-434. Recordkeeping requirements.

1. Owner or operator.

   a. Each owner or operator subject to the provisions of sections 33-24-05-420 through 33-24-05-449 shall comply with the recordkeeping requirements of this section.

   b. An owner or operator of more than one hazardous waste management unit subject to the provisions of sections 33-24-05-420 through 33-24-05-449 may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

2. Owners and operators must record the following information in the facility operating record:

   a. For each piece of equipment to which sections 33-24-05-420 through 33-24-05-449 applies:

      (1) Equipment identification number and hazardous waste management unit identification.

      (2) Approximate locations within the facility, for example, identify the hazardous waste management unit on a facility plot plan.

      (3) Type of equipment, for example, a pump or pipeline valve.

      (4) Percent-by-weight total organics in the hazardous waste stream at the equipment.

      (5) Hazardous waste state at the equipment, for example, gas/vapor or liquid.

      (6) Method of compliance with the standard, for example, "monthly leak detection and repair" or "equipped with dual mechanical seals".

   b. For facilities that comply with the provisions of subdivision b of subsection 1 of section 33-24-05-403, an implementation schedule as specified in subdivision b of subsection 1 of section 33-24-05-403.

   c. Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in subdivision c of subsection 2 of section 33-24-05-405.

d. Documentation of compliance with section 33-24-05-430, including the detailed design documentation or performance test results specified in subdivision d of subsection 2 of section 33-24-05-405.

3. When each leak is detected as specified in sections 33-24-05-422, 33-24-05-423, 33-24-05-427, and 33-24-05-428, the following requirements apply:

   a. A weatherproof and fully visible identification, marked with the equipment identification number, the date evidence of a potential leak was found in accordance with subsection 1 of section 33-24-05-428, and the date the leak was detected, must be attached to the leaking equipment.

   b. The identification on equipment, except on a valve, may be removed after it has been repaired.

   c. The identification on a valve may be removed after it has been monitored for two successive months as specified in subsection 3 of section 33-24-05-427 and no leak has been detected during those two months.

4. When each leak is detected as specified in sections 33-24-05-422, 33-24-05-423, 33-24-05-427, and 33-24-05-428, the following information must be recorded in an inspection log and must be kept in the facility operating record:

   a. The instrument and operator identification numbers and the equipment identification number.

   b. The date evidence of a potential leak was found in accordance with subsection 1 of section 33-24-05-428.

   c. The date the leak was detected and the dates of each attempt to repair the leak.

   d. Repair methods applied in each attempt to repair the leak.

   e. "Above ten thousand" if the maximum instrument reading measured by the methods specified in subsection 2 of section 33-24-05-433 after each repair attempt is equal to or greater than ten thousand parts per million.

   f. "Repair delayed" and the reason for the delay if a leak is not repaired within fifteen calendar days after discovery of the leak.

   g. Documentation supporting the delay of repair of a valve in compliance with subsection 3 of section 33-24-05-429.

   h. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.

   i. The expected date of successful repair of the leak if a leak is not repaired within fifteen calendar days.

   j. The date of successful repair of the leak.

5. Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of section 33-24-05-430 must be recorded and kept up-to-date in the facility operating record as specified in subsection 3 of section 33-24-05-405. Design documentation as specified in subdivisions a and b of subsection 3 of section 33-24-05-405 and monitoring, operating, and inspection information in subdivisions c through h of subsection 3 of section 33-24-05-405.

6. For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the department will specify the appropriate recordkeeping requirements.

7. The following information pertaining to all equipment subject to the requirements in sections 33-24-05-422 through 33-24-05-430 must be recorded in a log that is kept in the facility operating record:

   a. A list of identification numbers for equipment (except welded fitting) subject to the requirements of sections 33-24-05-420 through 33-24-05-449.

   b. Equipment.

      (1) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than five hundred parts per million above background, under the provisions of subsection 5 of section 33-24-05-422, subsection 9 of section 33-24-05-423, and subsection 6 of section 33-24-05-427.

      (2) The designation of this equipment as subject to the requirements of subsection 5 of section 33-24-05-422, subsection 9 of section 33-24-05-423, or subsection 6 of section 33-24-05-427 must be signed by the owner or operator.

   c. A list of equipment identification numbers for pressure relief devices required to comply with subsection 1 of section 33-24-05-424.

   d. Data.

      (1) The dates of each compliance test required in subsection 5 of section 33-24-05-422, subsection 9 of section 33-24-05-423, section 33-24-05-424, and subsection 6 of section 33-24-05-427.

      (2) The background level measured during each compliance test.

      (3) The maximum instrument reading measured at the equipment during each compliance test.

   e. A list of identification numbers for equipment in vacuum service.

   f. Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least ten percent by weight for less than three hundred hours per calendar year.

8. The following information pertaining to all valves subject to the requirements of subsections 7 and 8 of section 33-24-05-427 must be recorded in a log that is kept in the facility operating record.

   a. A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.

   b. A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.

9. The following information must be recorded in the facility operating record for valves complying with section 33-24-05-432:

a. A schedule of the monitoring.

b. The percent of valves found leaking during each monitoring period.

10. The following information must be recorded in a log that is kept in the facility operating record:

a. Criteria required in paragraph 2 of subdivision e of subsection 4 of section 33-24-05-422 and subdivision b of subsection 5 of section 33-24-05-423 and an explanation of the design criteria.

b. Any changes to these criteria and the reasons for the changes.

11. The following information must be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in the applicability section of sections 33-24-05-420 through 33-24-05-449 and other specific sections:

a. An analysis determining the design capacity of the hazardous waste management unit.

b. A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in sections 33-24-05-422 through 33-24-05-430 and an analysis determining whether these hazardous wastes are heavy liquids.

c. An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in sections 33-24-05-422 through 33-24-05-430. The record must include supporting documentation as required by subdivision c of subsection 4 of section 33-24-05-433 when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action, for example, changing the process that produced the waste, that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in sections 33-24-05-422 through 33-24-05-430, then a new determination is required.

12. Records of the equipment leak information required by subsection 4 and the operating information required by subsection 5 need be kept only three years.

13. The owner or operator of any facility with equipment that is subject to sections 33-24-05-420 through 33-24-05-449 and to the regulations at 40 CFR parts 60, 61, or 63, may elect to determine compliance with sections 33-24-05-420 through 33-24-05-449 either by documentation pursuant to section 33-24-05-434, or by documentation of compliance with the regulations at 40 CFR parts 60, 61, or 63, pursuant to the relevant provisions of the regulations at 40 CFR parts 60, 61, or 63. The documentation of compliance under the regulations at 40 CFR parts 60, 61, or 63 must be kept with or made readily available with the facility operating record.

History: Effective December 1, 1991; amended effective January 1, 1994; July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-435. Reporting requirements.

1. A semiannual report must be submitted by owners and operators subject to the requirements of sections 33-24-05-420 through 33-24-05-449 to the department by dates specified by the department. The report must include the following information:

a. The identification number, name, and address of the facility.

b. For each month during the semiannual reporting period:

(1) The equipment identification number of each valve for which a leak was not repaired as required in subsection 4 of section 33-24-05-427.

(2) The equipment identification number of each pump for which a leak was not repaired as required in subdivision f of subsection 4 of section 33-24-05-422 and subsection 3 of section 33-24-05-422.

(3) The equipment identification number of each compressor for which a leak was not repaired as required in subsection 7 of section 33-24-05-423.

c. Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period.

d. For each month during the semiannual reporting period, dates when the control device installed as required by section 33-24-05-422, 33-24-05-423, 33-24-05-424, or 33-24-05-425 exceeded or operated outside of the design specifications as defined in subsection 5 of section 33-24-05-434 and as indicated by the control device monitoring required by section 33-24-05-430 and was not corrected within twenty-four hours, the duration and cause of each exceedance, and any corrective measures taken.

2. If, during the semiannual reporting period, leaks from valves, pumps, and compressors are repaired as required in subsection 4 of section 33-24-05-427, subdivision f of subsection 4 of section 33-24-05-422, subsection 3 of section 33-24-05-422, and subsection 7 of section 33-24-05-423, respectively, and the control device does not exceed or operate outside of the design specifications as defined in subsection 5 of section 33-24-05-434 for more than twenty-four hours, a report to the department is not required.

History: Effective December 1, 1991; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-436. [Reserved]

33-24-05-437. [Reserved]

33-24-05-438. [Reserved]

33-24-05-439. [Reserved]

33-24-05-440. [Reserved]

33-24-05-441. [Reserved]

33-24-05-442. [Reserved]

33-24-05-443. [Reserved]

33-24-05-444. [Reserved]

33-24-05-445. [Reserved]

33-24-05-446. [Reserved]

33-24-05-447. [Reserved]

33-24-05-448. [Reserved]

33-24-05-449. [Reserved]

33-24-05-450. Applicability to air emission standards for tanks, surface impoundments, and containers.

1. The requirements of sections 33-24-05-450 through 33-24-05-474 apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either sections 33-24-05-89 through 33-24-05-129 except as section 33-24-05-01 and subsection 2 provide otherwise.

2. The requirements of sections 33-24-05-450 through 33-24-05-474 do not apply to the following waste management units at the facility:

   a. A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.

   b. A container that has a design capacity less than or equal to 26.417 gallons [0.1 meters^3].

   c. A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

   d. A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

   e. A waste management unit that is used solely for onsite treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required under the corrective action authorities of Resource Conservation and Recovery Act sections 3004(u), 3004(v), or 3008(h); Comprehensive Environmental Response, Compensation and Liability Act authorities, or similar federal or state authorities.

   f. A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.

   g. A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with this subdivision, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of subsection 9 of section 33-24-05-454, except as provided in subdivision e of subsection 3 of section 33-24-05-452.

   h. A tank that has a process vent as defined in section 33-24-05-401.

3. For the owner and operator of a facility subject to sections 33-24-05-450 through 33-24-05-474, and who received a final state-issued hazardous waste permit prior to December 6, 1996, the requirements of sections 33-24-05-450 through 33-24-05-474 shall be incorporated into the permit when the permit is reissued in accordance with the requirements of section 33-24-07-11 or reviewed in accordance with the requirements of section 33-24-06-06. Until such date when the permit is reissued in accordance with the requirements of section 33-24-07-11 or reviewed in accordance with the requirements of section 33-24-06-06, the owner and operator are subject to the applicable requirements of subsection 5 of section 33-24-06-16.

4. The requirements of sections 33-24-05-450 through 33-24-05-474, except for the recordkeeping requirements specified in subsection 9 of section 33-24-05-459, are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

   a. The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this subdivision, "organic peroxide" means an organic compound that contains the bivalent -0-0- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

   b. The owner or operator prepares documentation, in accordance with the requirements of subsection 9 of section 33-24-05-459, explaining why an undue safety hazard would be created if air emission controls specified in sections 33-24-05-454 through 33-24-05-457 are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of subdivision a.

   c. The owner or operator notifies the department in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of subdivision a are managed at the facility in tanks or containers meeting the conditions of subdivision b. The notification shall state the name and address of the facility, and be signed and dated by an authorized representative of the facility owner or operator.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-451. Definitions.

As used in sections 33-24-05-450 through 33-24-05-474, all terms shall have the meaning given to them as defined below or as defined elsewhere in this article.

1. "Average volatile organic concentration" or "average VO concentration" means the mass-weighted average volatile organic concentration of a hazardous waste as determined in accordance with the requirements of section 33-24-05-454.

2. "Closure device" means a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are

detachable from the cover (for example, a sampling port cap), manually operated (for example, a hinged access lid or hatch), or automatically operated (for example, a spring-loaded pressure relief valve).

3. "Continuous seal" means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

4. "Cover" means a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit.

5. "Enclosure" means any structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed-vent system to a control device.

6. "External floating roof" means a pontoon or double-deck type cover that rests on the surface of a material managed in a tank with no fixed roof.

7. "Fixed roof" means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit.

8. "Floating membrane cover" means a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment.

9. "Floating roof" means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the material being contained, and is equipped with a continuous seal.

10. "Hard-piping" means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

11. "In light material service" means the container is used to manage a material for which both of the following conditions apply: The vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals at 20 degrees Celsius; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kilopascals at 20 degrees Celsius is equal to or greater than twenty percent by weight.

12. "Internal floating roof" means a cover that rests or floats on the material surface (but not necessarily in complete contact with it) inside a tank that has a fixed roof.

13. "Liquid-mounted seal" means a foam or liquid-filled primary seal mounted in contact with the hazardous waste between the tank wall and the floating roof continuously around the circumference of the tank.

14. "Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

15. "Maximum organic vapor pressure" means the sum of the individual organic constituent partial pressures exerted by the material contained in a tank, at the maximum vapor

pressure-causing conditions (for example, temperature, agitation, pH effects of combining wastes, etc.) reasonably expected to occur in the tank. For the purpose of sections 33-24-05-450 through 33-24-05-474, maximum organic vapor pressure is determined using the procedures specified in subsection 3 of section 33-24-05-453.

16. "Metallic shoe seal" means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

17. "No detectable organic emissions" means no escape of organics to the atmosphere as determined using the procedure specified in subsection 4 of section 33-24-05-453.

18. "Point of waste origination" means as follows:

    a. When the facility owner or operator is the generator of the hazardous waste, the point of waste origination means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in chapter 33-24-02.

       [Note: In this case, this term is being used in a manner similar to the use of the term "point of generation" in air standards established for waste management operations under authority of the Clean Air Act in 40 CFR parts 60, 61, and 63.]

    b. When the facility owner and operator are not the generator of the hazardous waste, point of waste origination means the point where the owner or operator accepts delivery or takes possession of the hazardous waste.

19. "Point of waste treatment" means the point where a hazardous waste to be treated in accordance with subdivision 6 of subsection 3 of section 33-24-05-452 exits the treatment process. Any waste determination shall be made before the waste is conveyed, handled, or otherwise managed in a manner that allows the waste to volatilize to the atmosphere.

20. "Safety device" means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of sections 33-24-05-450 through 33-24-05-474, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flamable, ignitable, explosive, reactive, or hazardous materials.

21. "Single-seal system" means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

22. "Vapor-mounted seal" means a continuous seal that is mounted such that there is a vapor space between the hazardous waste in the unit and the bottom of the seal.

23. "Volatile organic concentration" or "VO concentration" means the fraction by weight of the volatile organic compounds contained in a hazardous waste expressed in terms of parts per million as determined by direct measurement or by knowledge of the waste in accordance with

the requirements of section 33-24-05-453. For the purpose of determining the VO concentration of a hazardous waste, organic compounds with a Henry's law constant value of at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^6 atmospheres/gram-mole/m^3] at 25 degrees Celsius must be included. Appendix VI presents a list of compounds known to have a Henry's law constant value less than the cutoff level.

24. "Waste determination" means performing all applicable procedures in accordance with the requirements of section 33-24-05-454 to determine whether a hazardous waste meets standards specified in sections 33-24-05-450 through 33-24-05-474. Examples of a waste determination include performing the procedures in accordance with the requirements of section 33-24-05-454 to determine the average VO concentration of a hazardous waste at the point of waste origination; the average VO concentration of a hazardous waste at the point of waste treatment and comparing the results to the exit concentration limit specified for the process used to treat the hazardous waste; the organic reduction efficiency and the organic biodegradation efficiency for a biological process used to treat a hazardous waste and comparing the results to the applicable standards; or the maximum volatile organic vapor pressure for a hazardous waste in a tank and comparing the results to the applicable standards.

25. "Waste stabilization process" means any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids as determined by Test Method 9095B (Paint Filter Liquids Test) in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846 as incorporated by reference in section 33-24-01-05. A waste stabilization process includes mixing the hazardous waste with binders or other materials, and curing the resulting hazardous waste and binder mixture. Other synonymous terms used to refer to this process are "waste fixation" or "waste solidification". This does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-452. Standards - General.

1. This section applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to sections 33-24-05-450 through 33-24-05-474.

2. The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in sections 33-24-05-454 through 33-24-05-457, as applicable to the hazardous waste management unit, except as provided for in subsection 3.

3. A tank, surface impoundment, or container is exempt from standards specified in sections 33-24-05-454 through 33-24-05-457, as applicable, provided that the waste management unit is one of the following:

   a. A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than five hundred parts per million by weight. The average VO concentration shall be determined using the procedures specified in subsection 1 of section 33-24-05-453. The owner or operator shall review and update, as necessary, this determination at least once every twelve months following the date of the initial determination for the hazardous waste streams entering the unit.

b. A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:

(1) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in subsection 2 of section 33-24-05-453.

(2) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than ninety-five percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than one hundred parts per million weight. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in subsection 2 of section 33-24-05-453.

(3) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in subsection 2 of section 33-24-05-453.

(4) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

(a) The organic reduction efficiency (R) for the process is equal to or greater than ninety-five percent, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than ninety-five percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in subsection 2 of section 33-24-05-453.

(b) The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in subsection 2 of section 33-24-05-453.

(5) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

(a) From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is managed continuously in waste management units which use air emission controls in accordance with the standards specified in sections 33-24-05-454 through 33-24-05-457, as applicable to the waste management unit.

(b) From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. The department considers a drain system that meets the requirements of 40 CFR part 63,

subpart RR - national emission standards for individual drain systems to be a closed system.

(c) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual waste streams entering the process or five hundred parts per million weight, whichever value is lower. The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified in subsection 1 of section 33-24-05-453. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in subsection 2 of section 33-24-05-453.

(6) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than ninety-five percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than ten thousand parts per million weight. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination must be determined using the procedures specified in subsections 2 and 1 of section 33-24-05-453, respectively.

(7) A hazardous waste incinerator for which the owner or operator has either:

(a) Been issued a final permit under chapter 33-24-06 which implements the requirements of sections 33-24-05-144 through 33-24-05-159; or

(b) Has designed and operates the incinerator in accordance with the applicable interim status requirements of subsection 5 of section 33-24-06-16.

(8) A boiler or industrial furnace for which the owner or operator has either:

(a) Been issued a final permit under chapter 33-24-06 which implements the requirements of sections 33-24-05-525 through 33-24-05-549; or

(b) Has designed and operates the boiler or industrial furnace in accordance with sections 33-24-05-525 through 33-24-05-549.

(9) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of paragraphs 1 through 6, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

(a) If method 25D in 40 CFR part 60, appendix A, is used for the analysis, one-half the blank value determined in the method at section 4.4 of method 25D in 40 CFR part 60, appendix A, or a value of twenty-five parts per million by weight, whichever is less.

(b) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction- in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at twenty-five degrees Celsius.

c. A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of paragraph 4 of subdivision b.

d. A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

(1) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in sections 33-24-05-250 through 33-24-05-299 under table "Treatment Standards for Hazardous Waste" in section 33-24-05-280; or

(2) The organic hazardous constituents in the waste have been treated by the treatment technology established by the environmental protection agency for the waste in subsection 1 of section 33-24-05-282, or have been removed or destroyed by an equivalent method of treatment approved by the environmental protection agency pursuant to subsection 2 of section 33-24-05-282.

e. A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:

(1) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF - national emission standards for benzene waste operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than ten megagrams per year;

(2) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996; and

(3) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in section 5.0 to "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" annually.

4. The department may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this section as follows:

a. The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of subsection 1 of section 33-24-05-453. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of subsection 2 of section 33-24-05-453.

b. In performing a waste determination pursuant to subdivision a, the sample preparation and analysis shall be conducted as follows:

(1) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in paragraph 2.

(2) If the department determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment, or container, then the department may choose an appropriate method.

c. In a case when the owner or operator is requested to perform the waste determination, the department may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

d. In a case when the results of the waste determination performed or requested by the department do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of subdivision a shall be used to establish compliance with the requirements of sections 33-24-05-450 through 33-24-05-474.

e. In a case when the owner or operator has used an averaging period greater than one hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the department may elect to establish compliance with sections 33-24-05-450 through 33-24-05-474 by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a one-hour period as follows:

(1) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of subsection 1 of section 33-24-05-453.

(2) Results of the waste determination performed or requested by the department showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than five hundred parts per million weight shall constitute noncompliance with sections 33-24-05-450 through 33-24-05-474 except in a case as provided for in paragraph 3.

(3) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than one hour to be less than five hundred parts per million weight but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given one-hour period may be equal to or greater than five hundred parts per million weight, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (for example, test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of subsection 1 of section 33-24-05-453 and section 33-24-05-459 shall be considered by the department together with the results of the waste determination performed or requested by the department in establishing compliance with sections 33-24-05-450 through 33-24-05-474.

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General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-453. Waste determination procedures.

1. Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

a. An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of subdivision a of subsection 3 of section 33-24-05-452 from using air emission controls in accordance with standards specified in sections 33-24-05-454 through 33-24-05-457, as applicable to the waste management unit.

(1) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of subdivision a of subsection 3 of section 33-24-05-452 from using air emission controls, and thereafter an initial determination of the average VO concentration of the waste stream shall be made for each averaging period that a hazardous waste is managed in the unit; and

(2) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration limits specified in section 33-24-05-452.

b. For a waste determination that is required by subdivision a, the average VO concentration of a hazardous waste at the point of waste origination may be determined using either direct measurement as specified in subdivision c or by knowledge as specified in subdivision d.

c. Direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination.

(1) Identification. The owner or operator shall identify and record the point of waste origination for the hazardous waste.

(2) Sampling. Samples of the hazardous waste stream must be collected at the point of waste origination in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(a) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis must be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed one year.

(b) A sufficient number of samples, but no less than four samples, must be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

(c) All samples must be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan must describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum

loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan must be maintained onsite in the facility operating records. An example of an acceptable sample collection and handling procedures for a total volatile organic constituent concentration may be found in method 25D in 40 CFR part 60, appendix A.

(d) Sufficient information, as specified in the "site sampling plan" required under subparagraph c shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the source or process generating the hazardous waste represented by the samples.

(3) Analysis. Each collected sample must be prepared and analyzed in accordance with method 25D in 40 CFR part 60, appendix A, for the total concentration of volatile organic constituents, or using one or more methods when the individual organic compound concentrations are identified and summed and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/ mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8 x 10^{-6} atmospheres/gram-mole meters^3] at twenty-five degrees Celsius. At the owner's or operator's discretion, the owner or operator may adjust test data obtained by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry's law constant value of less than 0.1 Y/X at twenty-five degrees Celsius. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at twenty-five degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements in subparagraphs a or b and provided the requirement to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at twenty-five degrees Celsius, is met.

(a) Any environmental protection agency standard method that has been validated in accordance with "Alternative Validation Procedure for Environmental Protection Agency Waste and Wastewater Methods", 40 CFR part 63, appendix D.

(b) Any other analysis method that has been validated in accordance with the procedures specified in section 5.1 or 5.3, and the corresponding calculations in section 6.1 or section 6.3, of method 301 in 40 CFR part 63, appendix A. The data are acceptable if they meet the criteria specified in section 6.1.5 or 6.3.3 of method 301. If correction is required under section 6.3.3 of method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of method 301 are not required.

(4) Calculations.

(a) The average VO concentration (C) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with paragraphs 2 and 3 and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^{n} (Q_i \times C_i)$$

where:

C = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, parts per million weight.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted (at least four) for the averaging period (not to exceed one year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kilograms per hour.

Q_t = Total mass quantity of hazardous waste during the averaging period, kilograms per hour.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of paragraph 3 (for example, the average of the four or more samples specified in subparagraph b of paragraph 2), parts per million weight.

(b) For the purpose of determining C_i, for individual waste samples analyzed in accordance with paragraph 3, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

[1] If method 25D in 40 CFR part 60, appendix A, is used for the analysis, one-half the blank value determined in the method at section 4.4 of method 25D in 40 CFR part 60, appendix A.

[2] If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/ mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at twenty-five degrees Celsius.

(5) Provided that the test method is appropriate for the waste as required under paragraph 3, the department will determine compliance based on the test method used by the owner or operator as recorded pursuant to subsection 6 of section 33-24-05-459.

d. Use of owner or operator knowledge to determine average VO concentration of a hazardous waste at the point of waste origination.

(1) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the hazardous waste stream's average VO

concentration. Examples of information that may be used as the basis for knowledge include material balances for the source or process generating the hazardous waste stream; constituent-specific chemical test data for the hazardous waste stream from previous testing that are still applicable to the current waste stream; previous test data for other locations managing the same type of waste stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.

(2) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use organic concentration test data for the hazardous waste stream that are validated in accordance with method 301 in 40 CFR part 63, appendix A, as the basis for knowledge of the waste.

(3) An owner or operator using chemical constituent-specific concentration test data as the basis for knowledge of the hazardous waste may adjust the test data to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using method 25D and 40 CFR part 60, appendix A. To adjust these data, the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}).

(4) In the event that the department and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement as specified in subdivision c must be used to establish compliance with the applicable requirements in sections 33-24-05-450 through 33-24-05-474. The department may perform or request that the owner or operator perform this determination using direct measurement. The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of paragraph 3 of subdivision c.

2. Waste determination procedures for treated hazardous waste.

a. An owner or operator shall perform the applicable waste determinations for each treated hazardous waste placed in waste management units exempted under the provisions of paragraphs 1 through 6 of subdivision b of subsection 3 of section 33-24-05-452 from using air emission controls in accordance with standards specified in sections 33-24-05-454 through 33-24-05-457, as applicable to the waste management unit.

(1) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the treated waste stream is placed in the exempt waste management unit, and thereafter update the information used for the waste determination at least once every twelve months following the date of the initial waste determination; and

(2) Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in subdivision b of subsection 3 of section 33-24-05-452 are not achieved.

b. The waste determination for a treated hazardous waste must be performed in accordance with the procedures specified in subdivisions c through j, as applicable to the treated hazardous waste.

c. The owner or operator shall designate and record the specific provision in subdivision b of subsection 3 of section 33-24-05-452 under which the waste determination is being performed. The waste determination for the treated hazardous waste shall be performed using the applicable procedures specified in subdivisions d through j.

d. Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment.

(1) Identification. The owner or operator shall identify and record the point of waste treatment for the hazardous waste.

(2) Sampling. Samples of the hazardous waste stream must be collected at the point of waste treatment in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(a) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis must be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed one.

(b) A sufficient number of samples, but no less than four samples, must be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the process generating or treating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

(c) All samples must be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan must describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan must be maintained onsite in the facility operating records. An example of acceptable sample collection and handling procedures for a total volatile organic constituent concentration may be found in method 25D in 40 CFR part 60, appendix A.

(d) Sufficient information, as specified in the "site sampling plan" required under subparagraph c shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the process treating the hazardous waste represented by the samples.

(3) Analysis. Each collected sample must be prepared and analyzed in accordance with method 25D in 40 CFR part 60, appendix A, for the total concentration of volatile

organic constituents, or using one or more methods when the individual organic compound concentrations are identified and summed and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/ mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8 x 10^{-6} atmospheres/gram-mole meters^3] at twenty-five degrees Celsius. When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system to determine if the conditions of paragraphs 1 through 6 of subdivision b of subsection 3 of section 33-24-05-452 are met, then the waste samples shall be prepared and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. At the owner's or operator's discretion, the owner or operator may adjust test data obtained by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry's law constant value less than 0.1 Y/X at twenty-five degrees Celsius. To adjust these data the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}) If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at twenty-five degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements in subparagraph a or b of paragraph 3 of subdivision c of subsection 1 and provided the requirement to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X [which can also be expressed as 1.8 x 10-6 atmospheres/gram-mole/m^3] at twenty-five degrees Celsius, is met.

(a) Any environmental protection agency standard method that has been validated in accordance with "Alternative Validation Procedure for Environmental Protection Agency Waste and Wastewater Methods", 40 CFR part 63, appendix D.

(b) Any other analysis method that has been validated in accordance with the procedures specified in section 5.1 or 5.3 and the corresponding calculations in section 6.1 or section 6.3 of method 301 in 40 CFR part 63, appendix A. The data are acceptable if they meet the criteria specified in section 6.1.5 or 6.3.3 of method 301. If correction is required under section 6.3.3 of method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of method 301 are not required.

(4) Calculations. The average VO concentration (C) on a mass-weighted basis must be calculated by using the results for all waste determinations conducted in accordance with paragraphs 2 and 3 and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^{n} (Q_i \times C_i)$$

where:

C = Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, parts per million weight.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed one year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kilograms per hour.

Q_T = Total mass quantity of hazardous waste during the averaging period, kilograms per hour.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of paragraph 3 (for example, the average of the four or more samples specified in subparagraph b of paragraph 2), parts per million weight.

(5) Provided that the test method is appropriate for the waste as required under paragraph 3, compliance shall be determined based on the test method used by the owner or operator as recorded pursuant to subdivision a of subsection 6 of section 33-24-05-459.

e. Procedure to determine the exit concentration limit (C_t) for a treated hazardous waste.

(1) The point of waste origination for each hazardous waste treated by the process at the same time must be identified.

(2) If a single hazardous waste stream is identified in paragraph 1, then the exit concentration limit (C_t) must be five hundred parts per million weight.

(3) If more than one hazardous waste stream is identified in paragraph 1, then the average VO concentration of each hazardous waste stream at the point of waste origination must be determined in accordance with the requirements of subsection 1. The exit concentration limit (C_t) must be calculated by using the results determined for each individual hazardous waste stream and the following equation:

$$C_t = \frac{\sum_{x=1}^{m} (Q_x \times \overline{C_x}) + \sum_{y=1}^{n} (Q_y \times 500 \text{ ppmw})}{\sum_{x=1}^{m} Q_x + \sum_{y=1}^{n} Q_y}$$

where:

C_t = Exit concentration limit for treated hazardous waste, parts per million weight.

x = Individual hazardous waste stream "x" that has an average VO concentration less than five hundred parts per million weight at the point

of waste origination as determined in accordance with the requirements of subsection 1.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than five hundred parts per million weight at the point of waste origination as determined in accordance with the requirements of subsection 1.

m = Total number of "x" hazardous waste streams treated by process.

n = Total number of "y" hazardous waste streams treated by process.

Q_x = Annual mass quantity of hazardous waste stream "x", kilograms per year.

Q_y = Annual mass quantity of hazardous waste stream "y", kilograms per year.

C_x = Average VO concentration of hazardous waste stream "x" at the point of waste origination as determined in accordance with the requirements of subsection 1, parts per million weight.

f. Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.

(1) The organic reduction efficiency (R) for a treatment process must be determined based on results for a minimum of three consecutive runs.

(2) All hazardous waste streams entering the treatment process and all hazardous waste streams exiting the treatment process must be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the hazardous waste in the process.

(3) For each run, information must be determined for each hazardous waste stream identified in paragraph 2 using the following procedures:

(a) The mass quantity of each hazardous waste stream entering the process (Q_b) and the mass quantity of each hazardous waste stream exiting the process (Q_a) must be determined.

(b) The average VO concentration at the point of waste origination of each hazardous waste stream entering the process (C_b) during the run must be determined in accordance with the requirements of of subdivision c of subsection 1. The average VO concentration at the point of waste treatment of each waste stream exiting the process (C_a) during the run must be determined in accordance with the requirements of subdivision d.

(4) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) must be calculated by using the results determined in accordance with paragraph 3 and the following equations:

$$E_b = \frac{1}{10^6} \sum_{j=1}^{m} (Q_{bj} \times \overline{C_{bj}})$$

$$E_a = \frac{1}{10^6} \sum_{j=1}^{m} (Q_{aj} \times \overline{C_{aj}})$$

where:

E_a = Waste volatile organic mass flow exiting process, kilograms per hour.

E_b = Waste volatile organic mass flow entering process, kilograms per hour.

m = Total number of runs (at least three).

j = Individual run "j".

Q_b = Mass quantity of hazardous waste entering process during run "j", kilograms per hour.

Q_a = Average mass quantity of hazardous waste exiting process during run "j", kilograms per hour.

C_a = Average VO concentration of hazardous waste exiting process during run "j" as determined in accordance with the requirements of subdivision d, parts per million weight.

C_b = Average VO concentration of hazardous waste entering process during run "j" as determined in accordance with the requirements of subdivision c of subsection 1, parts per million weight.

(5) The organic reduction efficiency of the process shall be calculated by using the results determined in accordance with paragraph 4 and the following equation:

where:

$$R = \frac{E_b - E_a}{E_b} \times 100\%$$

R = Organic reduction efficiency, percent.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of paragraph 4, kilograms per hour.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph 4, kilograms per hour.

g. Procedure to determine the organic biodegradation efficiency (R_{bio}) for a treated hazardous waste.

(1) The fraction of organics biodegraded (F_{bio}) must be determined using the procedure specified in 40 CFR part 63, appendix C.

(2) The R_{bio} must be calculated by using the following equation:

$$R_{bio} = F_{bio} \times 100\%$$

where:

R_{bio} = Organic biodegradation efficiency, percent.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph 1.

h. Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.

(1) All of the hazardous waste streams entering the treatment process must be identified.

(2) The average VO concentration of each hazardous waste stream at the point of waste origination must be determined in accordance with the requirements of subsection 1.

(3) For each individual hazardous waste stream that has an average VO concentration equal to or greater than five hundred parts per million weight at the point of waste origination, the average volumetric flow rate and the density of the hazardous waste stream at the point of waste origination must be determined.

(4) The RMR must be calculated by using the average VO concentration, average volumetric flow rate, and density determined for each individual hazardous waste stream, and the following equation:

$$RMR = \sum_{y=1}^{n} \left[V_y \times k_y \times \frac{\bar{C}_y - 500\,ppmw}{10^6} \right]$$

where: RMR = Required organic mass removal rate, kilograms per hour.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than five hundred parts per million weight at the point of waste origination as determined in accordance with the requirements of subsection 1.

n = Total number of "y" hazardous waste streams treated by process.

V_y = Average volumetric flow rate of hazardous waste stream "y" at the point of waste origination, meters^3 per hour.

K_y = Density of hazardous waste stream, "y", kilograms per meters^3.

C_y = Average VO concentration of hazardous waste stream "y" at the point of waste origination as determined in accordance with the requirements of subsection 1, parts per million weight.

i. Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.

(1) The MR shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run must be one hour.

(2) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) must be determined in accordance with the requirements of paragraph 4 of subdivision f.

(3) The MR must be calculated by using the mass flow rate determined in accordance with the requirements paragraph 2 and the following equation:

$$MR = E_b - E_a$$

where:

MR = Actual organic mass removal rate, kilograms per hour.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of of paragraph 4 of subdivision f, kilograms per hour.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of of paragraph 4 of subdivision f, kilograms per hour.

j. Procedure to determine the actual organic mass biodegradation rate (MR_{bio}) for a treated hazardous waste.

(1) The MR_{bio} must be determined based on results for a minimum of three consecutive runs. The sampling time for each run must be one hour.

(2) The waste organic mass flow entering the process (E_b) must be determined in accordance with the requirements of paragraph 4 of subdivision f.

(3) The fraction of organic biodegraded (F_{bio}) must be determined using the procedure specified in 40 CFR part 63, appendix C.

(4) The MR_{bio} must be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of paragraphs 2 and 3, respectively, and the following equation:

$$MR_{bio} = E_b \times F_{bio}$$

where:

Mr_{bio} = Actual organic mass biodegradation rate, kilograms per hour.

E_b = Waste organic mass flow entering process as determined in accordance with the requirements of of paragraph 4 of subdivision f, kilograms per hour.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph 3.

3. Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.

a. An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using tank level 1 controls in accordance with standards specified in subsection 3 of section 33-24-05-454.

b. The maximum organic vapor pressure of the hazardous waste may be determined using either direct measurement as specified in subdivision c or knowledge of the waste as specified in subdivision d to determine the maximum organic vapor pressure which is representative of the hazardous waste composition stored or treated in the tank.

c. Direct measurement to determine the maximum organic vapor pressure of a hazardous waste.

(1) Sampling. A sufficient number of samples must be collected to be representative of the waste contained in the tank. All samples must be collected and handled in accordance with written procedures prepared by the owner or operator and

documented in a site sampling plan. This plan must describe the procedure by which representative samples of the hazardous waste are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan must be maintained onsite in the facility operating records. An example of acceptable sample collection and handling procedures may be found in method 25D in 40 CFR part 60, appendix A.

(2) Analysis. Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure of the hazardous waste:

(a) Method 25E in 40 CFR part 60, appendix A;

(b) Methods described in American Petroleum Institute Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating-Roof Tanks", as incorporated by reference in section 33-24-01-05;

(c) Methods obtained from the standard reference texts;

(d) ASTM method 2879-92, as incorporated by reference in section 33-24-01-05; or

(e) Any other method approved by the department.

d. Use of knowledge to determine the maximum organic vapor pressure of the hazardous waste. Documentation must be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum organic vapor pressure of the hazardous waste is less than the maximum vapor pressure limit listed in paragraph 1 of subdivision a of subsection 2 of section 33-24-05-454 for the applicable tank design capacity category. An example of information that may be used is documentation that the hazardous waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.

4. The procedure for determining no detectable organic emissions for the purpose of complying with sections 33-24-05-450 through 33-24-05-474 must be conducted in accordance with the procedures specified below:

a. The test must be conducted in accordance with the procedures specified in method 21 of 40 CFR part 60, appendix A. Each potential leak interface (for example, a location where organic vapor leakage could occur) on the cover and associated closure devices must be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure relief valve.

b. The test must be performed when the unit contains a hazardous waste having an organic concentration representative of the range of concentrations for the hazardous waste expected to be managed in the unit. During the test, the cover and closure devices must be secured in the closed position.

c. The detection instrument must meet the performance criteria of method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of method 21 must be for the average composition of the organic constituents in the

hazardous waste placed in the waste management unit, not for each individual organic constituent.

d. The detection instrument must be calibrated before use on each day of its use by the procedures specified in method 21 of 40 CFR part 60, appendix A.

e. Calibration gases must be as follows:

(1) Zero air (less than ten parts per million volume hydrocarbon in air); and

(2) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten thousand parts per million volume methane or n-hexane.

f. The background level must be determined according to the procedures in method 21 of 40 CFR part 60, appendix A.

g. Each potential leak interface must be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in method 21 of 40 CFR part 60, appendix A. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface must be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (for example, some pressure relief devices), the instrument probe inlet must be placed at approximately the center of the exhaust area to the atmosphere.

h. The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level must be compared with the value of five hundred parts per million volume except when monitoring a seal around a rotating shaft that passes through a cover opening, in which case the comparison must be as specified in subdivision i. If the difference is less than five hundred parts per million volume, then the potential leak interface is determined to operate with no detectable organic emissions.

i. For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level must be compared with the value of ten thousand parts per million weight. If the difference is less than ten thousand parts per million weight, then the potential leak interface is determined to operate with no detectable organic emissions.

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Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-454. Standards - Tanks.

1. The provisions of this section apply to the control of air pollutant emissions from tanks for which subsection 2 of section 33-24-05-452 references the use of this section for such air emission control.

2. The owner or operator shall control air pollutant emissions from each tank subject to this section in accordance with the following requirements as applicable:

a. For a tank that manages hazardous waste that meets all of the conditions specified in paragraphs 1 through 3, the owner or operator shall control air pollutant emissions from the tank in accordance with the tank level 1 controls specified in subsection 3 or the tank level 2 controls specified in subsection 4.

(1) The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

(a) For a tank design capacity equal to or greater than 5,330 feet^3 [151 meters^3], the maximum organic vapor pressure limit for the tank is 5.2 kilopascals.

(b) For a tank design capacity equal to or greater than 2,650 feet^3 [75 meters^3] but less than 5,330 feet^3 [151 meters^3], the maximum organic vapor pressure limit for the tank is 27.6 kilopascals.

(c) For a tank design capacity less than 2,650 feet^3 [75 meters^3], the maximum organic vapor pressure limit for the tank is 76.6 kilopascals.

(2) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with paragraph 1.

(3) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in section 33-24-05-451.

b. For a tank that manages hazardous waste that does not meet all of the conditions specified in paragraphs 1 through 3 of subdivision a, the owner or operator shall control air pollutant emissions from the tank by using tank level 2 controls in accordance with the requirements of subsection 4. Examples of tanks required to use tank level 2 controls include a tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in paragraph 1 of subdivision a.

3. Owners and operators controlling air pollutant emissions from a tank using tank level 1 controls shall meet the requirements specified in subdivisions a through d:

a. The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using tank level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure must be determined using the procedures specified in subsection 3 of section 33-24-05-453. Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in paragraph 1 of subdivision a of subsection 2, as applicable to the tank.

b. The tank must be equipped with a fixed roof designed to meet the following specifications:

(1) The fixed roof and its closure devices must be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (for example, a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (for example, a horizontal cylindrical tank equipped with a hatch).

(2) The fixed roof must be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(3) Each opening in the fixed roof, and any manifold system associated with the fixed roof, must be either:

(a) Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

(b) Connected by a closed-vent system that is vented to a control device. The control device must remove or destroy organics in the vent stream, and must be operating whenever hazardous waste is managed in the tank, except as provided for in items 1 and 2.

[1] During periods when it is necessary to provide access to the tank for performing the activities of item 2, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

[2] During periods of routine inspection, maintenance, or other activities needed for normal operations, and for removal of accumulated sludge or other residues from the bottom of the tank.

(4) The fixed roof and its closure devices must be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices include organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

c. Whenever a hazardous waste is in the tank, the fixed roof must be installed with each closure device secured in the closed position except as follows:

(1) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(a) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(b) To remove accumulated sludge or other residues from the bottom of the tank.

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device must be designed to operate with no detectable organic emissions when the device is secured in the

closed position. The settings at which the device opens must be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

(3) Opening of a safety device, as defined in section 33-24-05-451, is allowed at any time conditions require doing so to avoid an unsafe condition.

d. The owner or operator shall inspect the air emission control equipment in accordance with the following requirements:

(1) The fixed roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in subsection 12.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection 11.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in subsection 2 of section 33-24-05-459.

4. Owners and operators controlling air pollutant emissions from a tank using tank level 2 controls shall use one of the following tanks:

a. A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in subsection 5;

b. A tank equipped with an external floating roof in accordance with the requirements specified in subsection 6;

c. A tank vented through a closed-vent system to a control device in accordance with the requirements specified in subsection 7;

d. A pressure tank designed and operated in accordance with the requirements specified in subsection 8; or

e. A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in subsection 9.

5. The owner or operator who controls air pollutant emissions from a tank using a fixed-roof with an internal floating roof shall meet the requirements specified in subdivisions a through c.

a. The tank must be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(1) The internal floating roof must be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(2) The internal floating roof must be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

(a) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in section 33-24-05-451; or

(b) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(3) The internal floating roof must meet the following specifications:

(a) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(b) Each opening in the internal floating roof must be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

(c) Each penetration of the internal floating roof for the purpose of sampling must have a slit fabric cover that covers at least ninety percent of the opening.

(d) Each automatic bleeder vent and rim space vent must be gasketed.

(e) Each penetration of the internal floating roof that allows for passage of a ladder must have a gasketed sliding cover.

(f) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof must have a flexible fabric sleeve seal or a gasketed sliding cover.

b. The owner or operator shall operate the tank in accordance with the following requirements:

(1) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and must be completed as soon as practical.

(2) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(3) Prior to filling the tank, each cover, access hatch, gauge float well, or lid on any opening in the internal floating roof must be bolted or fastened closed (for example, no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

c. The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

(1) The floating roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects

include, but are not limited to the internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous waste surface from the atmosphere; or the slotted membrane has more than ten percent open area.

(2) The owner or operator shall inspect the internal floating roof components as follows except as provided in paragraph 3:

(a) Visually inspect the internal floating roof components through openings on the fixed roof (for example, manholes and roof hatches) at least once every twelve months after initial fill; and

(b) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every ten years.

(3) As an alternative to performing the inspection specified in paragraph 2 for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every five years.

(4) Prior to each inspection required by paragraph 2 or 3, the owner or operator shall notify the department in advance of each inspection to provide the department with the opportunity to have an observer present during the inspection. The owner or operator shall notify the department of the date and location of the inspection as follows:

(a) Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification must be prepared and sent by the owner or operator so that it is received by the department at least thirty calendar days before refilling the tank except when an inspection is not planned as provided for in subparagraph b.

(b) When a visual inspection is not planned and the owner or operator could not have known about the inspection thirty calendar days before refilling the tank, the owner or operator shall notify the department as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the department at least seven calendar days before refilling the tank.

(5) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection 11.

(6) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in subsection 2 of section 33-24-05-459.

d. Safety devices, as defined in section 33-24-05-451, may be installed and operated as necessary on any tank complying with the requirements of this subsection.

6. The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in subdivisions a through c.

a. The owner or operator shall design the external floating roof in accordance with the following requirements:

(1) The external floating roof must be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(2) The floating roof must be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(a) The primary seal must be a liquid-mounted seal or a metallic shoe seal, as defined in section 33-24-05-451. The total area of the gaps between the tank wall and the primary seal may not exceed 10.0 inches^2 per foot [212 square centimeters per meter] of tank diameter, and the width of any portion of these gaps may not exceed 1.5 inches [3.8 centimeters]. If a metallic shoe seal is used for the primary seal, the metallic shoe seal must be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least sixty-one centimeters above the liquid surface.

(b) The secondary seal must be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal may not exceed 1.0 inches^2 per foot [21.2 square centimeters per meter] of tank diameter, and the width of any portion of these gaps must not exceed 0.5 inches [1.3 centimeters].

(3) The external floating roof must meet the following specifications:

(a) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof must provide a projection below the liquid surface.

(b) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof must be equipped with a gasketed cover, seal, or lid.

(c) Each access hatch and each gauge float well must be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.

(d) Each automatic bleeder vent and each rim space vent must be equipped with a gasket.

(e) Each roof drain that empties into the liquid managed in the tank must be equipped with a slotted membrane fabric cover that covers at least ninety percent of the area of the opening.

(f) Each unslotted and slotted guide pole well must be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

(g) Each unslotted guide pole must be equipped with a gasketed cap on the end of the pole.

(h) Each slotted guide pole must be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

(i) Each gauge hatch and each sample well must be equipped with a gasketed cover.

b. The owner or operator shall operate the tank in accordance with the following requirements:

(1) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling must be continuous and must be completed as soon as practical.

(2) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof must be secured and maintained in a closed position at all times except when the closure device must be open for access.

(3) Covers on each access hatch and each gauge float well must be bolted or fastened when secured in the closed position.

(4) Automatic bleeder vents must be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(5) Rim space vents must be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(6) The cap on the end of each unslotted guide pole must be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(7) The cover on each gauge hatch or sample well must be secured in the closed position at all times except when the hatch or well must be opened for access.

(8) Both the primary seal and the secondary seal must completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

c. The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

(1) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(a) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within sixty calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every five years.

(b) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within sixty calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.

(c) If a tank ceases to hold hazardous waste for a period of one year or more, subsequent introduction of hazardous waste into the tank must be considered an initial operation for the purposes of subparagraphs a and b.

(d) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

[1] The seal gap measurements must be performed at one or more floating roof levels when the roof is floating off the roof supports.

[2] Seal gaps, if any, must be measured around the entire perimeter of the floating roof in each place where a 0.125-inch [0.32-centimeter] diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

[3] For a seal gap measured under this subdivision, the gap surface area must be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

[4] The total gap area must be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in paragraph 2 of subdivision a.

(e) If the seal gap measurements do not conform to the specifications in paragraph 2 of subdivision a, the owner or operator shall repair the defect in accordance with the requirements of subsection 11.

(f) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in subsection 2 of section 33-24-05-459.

(2) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(a) The floating roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(b) The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection 12.

(c) If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection 11.

(d) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in subsection 2 of section 33-24-05-459.

(3) Prior to each inspection required by paragraph 1 or 2, the owner or operator shall notify the department in advance of each inspection to provide the department with the opportunity to have an observer present during the inspection. The owner or operator shall notify the department of the date and location of the inspection as follows:

(a) Prior to each inspection to measure external floating roof seal gaps as required under paragraph 1, written notification must be prepared and sent by the owner or operator so that it is received by the department at least thirty calendar days before the date the measurements are scheduled to be performed.

(b) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification must be prepared and sent by the owner or operator so that it is received by the department at least thirty calendar days before refilling the tank except when an inspection is not planned as provided for in subparagraph c.

(c) When a visual inspection is not planned and the owner or operator could not have known about the inspection thirty calendar days before refilling the tank, the owner or operator shall notify the department as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the department at least seven calendar days before refilling the tank.

d. Safety devices, as defined in section 33-24-05-451, may be installed and operated as necessary on any tank complying with the requirements of this subsection.

7. The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in subdivisions a through c.

a. The tank must be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(1) The fixed roof and its closure devices must be designed to form a continuous barrier over the entire surface area of the liquid in the tank.

(2) Each opening in the fixed roof not vented to the control device must be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices must be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device must be designed to operate with no detectable organic emissions.

(3) The fixed roof and its closure devices must be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices include organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(4) The closed-vent system and control device must be designed and operated in accordance with the requirements of section 33-24-05-457.

b. Whenever a hazardous waste is in the tank, the fixed roof must be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(1) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(a) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(b) To remove accumulated sludge or other residues from the bottom of a tank.

(2) Opening of a safety device, as defined in section 33-24-05-451, is allowed at any time conditions require doing so to avoid an unsafe condition.

c. The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(1) The fixed roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The closed-vent system and control device must be inspected and monitored by the owner or operator in accordance with the procedures specified in section 33-24-05-457.

(3) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection 12.

(4) If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection 11.

(5) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in subsection 2 of section 33-24-05-459.

8. The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements:

a. The tank must be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

b. All tank openings must be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in subsection 4 of section 33-24-05-453.

c. Whenever a hazardous waste is in the tank, the tank must be operated as a closed system that does not vent to the atmosphere except under either of the following conditions as specified in paragraph 1 or 2:

(1) At those times when opening of a safety device, as defined in section 33-24-05-451, is required to avoid an unsafe condition.

(2) At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of section 33-24-05-457.

9. The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in subdivisions a through d.

a. The tank must be located inside an enclosure. The enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in section 5.0 to "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

b. The enclosure must be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in section 33-24-05-457.

c. Safety devices, as defined in section 33-24-05-451, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of subdivisions a and b.

d. The owner or operator shall inspect and monitor the closed-vent system and control device as specified in section 33-24-05-457.

10. The owner or operator shall transfer hazardous waste to a tank subject to this section in accordance with the following requirements:

a. Transfer of hazardous waste, except as provided in subdivision b, to the tank from another tank subject to this section or from a surface impoundment subject to section 33-24-05-455 must be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR - National Emission Standards for Individual Drain Systems.

b. The requirements of subdivision a do not apply when transferring a hazardous waste to the tank under any of the following conditions:

(1) The hazardous waste meets the average VO concentration conditions specified in subdivision a of subsection 3 of section 33-24-05-452 at the point of waste origination.

(2) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subdivision b of subsection 3 of section 33-24-05-452.

(3) The hazardous waste meets the requirements of subdivision d of subsection 3 of section 33-24-05-452.

11. The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subdivision d of subsection 3, subdivision c of subsection 5, subdivision c of subsection 6, or subdivision c of subsection 7 as follows:

a. The owner or operator shall make first efforts at repair of the defect no later than five calendar days after detection, and repair shall be completed as soon as possible but no later than forty-five calendar days after detection except as provided in subdivision b.

b. Repair of a defect may be delayed beyond forty-five calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

12. Following the initial inspection and monitoring of the cover as required by the applicable provisions of sections 33-24-05-450 through 33-24-05-474, subsequent inspection and monitoring may be performed at intervals longer than one year under the following special conditions:

a. If inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

(1) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(2) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable section of sections 33-24-05-450 through 33-24-05-474, as frequently as practicable during those times when a worker can safely access the cover.

b. If a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this section, only those portions of the tank cover and those connections to the tank (for example, fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

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Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-455. Standards - Surface impoundments.

1. The provisions of this section apply to the control of air pollutant emissions from surface impoundments for which subsection 2 of section 33-24-05-452 references the use of this section for such air emission control.

2. The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

a. A floating membrane cover in accordance with the provisions specified in subsection 3; or

b. A cover that is vented through a closed-vent system to a control device in accordance with the provisions specified in subsection 4.

3. The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in subdivisions a through c.

a. The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(1) The floating membrane cover must be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.

(2) The cover shall be fabricated from a synthetic membrane material that is either:

(a) High density polyethylene with a thickness no less than 0.1 inches [2.5 millimeters]; or

(b) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in subparagraph a and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(3) The cover must be installed so there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(4) Except as provided for in paragraph 5, each opening in the floating membrane cover must be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(5) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least ninety percent of the area of the opening or a flexible fabric sleeve seal.

(6) The closure devices must be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices include organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

b. Whenever a hazardous waste is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:

(1) Opening of closure devices or removal of the cover is allowed at the following times:

(a) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

(b) To remove accumulated sludge or other residues from the bottom of a surface impoundment.

(2) Opening of a safety device, as defined in section 33-24-05-451, is allowed at any time conditions require doing so to avoid an unsafe condition.

c. The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:

(1) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection 7.

(3) If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection 6.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in subsection 3 of section 33-24-05-459.

4. The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in subdivisions a through c.

a. The surface impoundment must be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(1) The cover and its closure devices must be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

(2) Each opening in the cover not vented to the control device must be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices must be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device must be designed to operate with no detectable organic emissions using the procedure specified in subsection 4 of section 33-24-05-453.

(3) The cover and its closure devices must be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

(4) The closed-vent system and control device must be designed and operated in accordance with the requirements of section 33-24-05-457.

b. Whenever a hazardous waste is in the surface impoundment, the cover must be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

(1) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

(a) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.

(b) To remove accumulated sludge or other residues from the bottom of the surface impoundment.

(2) Opening of a safety device, as defined in section 33-24-05-451, is allowed at any time conditions require doing so to avoid an unsafe condition.

c. The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(1) The surface impoundment cover and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The closed-vent system and control device must be inspected and monitored by the owner or operator in accordance with the procedures specified in section 33-24-05-457.

(3) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in subsection 7.

(4) If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of subsection 6.

(5) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in subsection 3 of section 33-24-05-459.

5. The owner or operator shall transfer hazardous waste to a surface impoundment subject to this section in accordance with the following requirements:

   a. Transfer of hazardous waste, except as provided in subdivision b, to the surface impoundment from another surface impoundment subject to this section or from a tank subject to section 33-24-05-454 must be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR - National Emission Standards for Individual Drain Systems.

   b. The requirements of subdivision a do not apply when transferring a hazardous waste to the surface impoundment under any of the following conditions:

      (1) The hazardous waste meets the average VO concentration conditions specified in subdivision a of subsection 3 of section 33-24-05-452 at the point of waste origination.

      (2) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subdivision b of subsection 3 of section 33-24-05-452.

      (3) The hazardous waste meets the requirements of subdivision d of subsection 3 of section 33-24-05-452.

6. The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subdivision c of subsection 3 or subdivision c of subsection 4 as follows:

   a. The owner or operator shall make first efforts at repair of the defect no later than five calendar days after detection and repair shall be completed as soon as possible but no later than forty-five calendar days after detection except as provided in subdivision b.

   b. Repair of a defect may be delayed beyond forty-five calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the surface impoundment stops operation. Repair of the defect must be completed before the process or unit resumes operation.

7. Following the initial inspection and monitoring of the cover as required by the applicable provisions of sections 33-24-05-450 through 33-24-05-474, subsequent inspection and monitoring may be performed at intervals longer than one year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

   a. Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

   b. Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable section of sections 33-24-05-450

through 33-24-05-474 as frequently as practicable during those times when a worker can safely access the cover.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-456. Standards - Containers.

1. The provisions of this section apply to the control of air pollutant emissions from containers for which subsection 2 of section 33-24-05-452 references the use of this section for such air emission control.

2. General requirements.

   a. The owner or operator shall control air pollutant emissions from each container subject to this section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in subdivision b apply to the container.

      (1) For a container having a design capacity greater than 3.5 feet^3 [0.1 meter^3] and less than or equal to 16.25 feet^3 [0.46 meter^3], the owner or operator shall control air pollutant emissions from the container in accordance with the container level 1 standards specified in subsection 3.

      (2) For a container having a design capacity greater than 16.25 feet^3 [0.46 meter^3] that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the container level 1 standards specified in subsection 3.

      (3) For a container having a design capacity greater than 16.25 feet^3 [0.46 meter^3] that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the container level 2 standards specified in subsection 4.

   b. When a container having a design capacity greater than 3.5 feet^3 [0.1 meter^3] is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance with the container level 3 standards specified in subsection 5 at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

3. Container level 1 standards.

   a. A container using container level 1 controls is one of the following:

      (1) A container that meets the applicable department of transportation regulations on packaging hazardous materials for transportation as specified in subsection 6.

      (2) A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (for example, a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (for example, a "portable tank" or bulk cargo container equipped with a screw-type cap).

(3) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

b. A container used to meet the requirements of paragraph 2 or 3 of subdivision a must be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall only include organic vapor permeability; the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

c. Whenever a hazardous waste is in a container using container level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

(1) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(a) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(b) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within fifteen minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(2) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(a) For the purpose of meeting the requirements of this section, an empty container as defined in subsections 3, 4, and 5 of section 33-24-02-07 may be open to the atmosphere at any time (for example, covers and closure devices are not required to be secured in the closed position on an empty container).

(b) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in subsections 3, 4, and 5 of section 33-24-02-07, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within fifteen minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(3) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(4) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(5) Opening of a safety device, as defined in section 33-24-05-451, is allowed at any time conditions require doing so to avoid an unsafe condition.

d. The owner or operator of containers using container level 1 controls shall inspect the containers and their covers and closure devices as follows:

(1) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within twenty-four hours after the container is accepted at the facility (for example, does not meet the conditions for an empty container as specified in subsections 3, 4, and 5 of section 33-24-02-07), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (for example, the date the container becomes subject to the container standards in sections 33-24-05-450 through 33-24-05-474). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on item 20 of the uniform hazardous waste manifest in appendix I to chapter 33-24-03 (environmental protection agency forms 8700-22 and 8700-22A), as required by section 33-24-05-38. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph 3.

(2) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every twelve months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in

the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph 3.

(3) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than twenty-four hours after detection and repair shall be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

e. The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 16.25 feet^3 [0.46 meter^3] or greater, which do not meet applicable department of transportation regulations as specified in subsection 6, are not managing hazardous waste in light material service.

4. Container level 2 standards.

a. A container using container level 2 controls is one of the following:

(1) A container that meets the applicable department of transportation regulations on packaging hazardous materials for transportation as specified in subsection 6.

(2) A container that operates with no detectable organic emissions as defined in section 33-24-05-451 and determined in accordance with the procedure specified in subsection 7.

(3) A container that has been demonstrated within the preceding twelve months to be vapor-tight by using 40 CFR part 60, appendix A, method 27 in accordance with the procedure specified in subsection 8.

b. Transfer of hazardous waste in or out of a container using container level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the department considers to meet the requirements of this subdivision include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

c. Whenever a hazardous waste is in a container using container level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(1) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(a) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(b) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within fifteen minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(2) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(a) For the purpose of meeting the requirements of this section, an empty container as defined in subsections 3, 4, and 5 of section 33-24-02-07 may be open to the atmosphere at any time (for example, covers and closure devices are not required to be secured in the closed position on an empty container).

(b) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in subsections 3, 4, and 5 of section 33-24-02-07, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within fifteen minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(3) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(4) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(5) Opening of a safety device, as defined in section 33-24-05-451, is allowed at any time conditions require doing so to avoid an unsafe condition.

d. The owner or operator of containers using container level 2 controls shall inspect the containers and their covers and closure devices as follows:

(1) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within twenty-four hours after the container is accepted at the facility (for example, does not meet the conditions for an empty container as specified in subsections 3, 4, and 5 of section 33-24-02-07), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (for example, the date the container becomes subject to the container standards in sections 33-24-05-450 through 33-24-05-474). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on item 20 of the uniform hazardous waste manifest in appendix I to chapter 33-24-03 (environmental protection agency forms 8700-22 and 8700-22A), as required by section 33-24-05-38. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph 3.

(2) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every twelve months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph 3.

(3) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than twenty-four hours after detection, and repair shall be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

5. Container level 3 standards.

a. A container using container level 3 controls is one of the following:

(1) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of paragraph 2 of subdivision b.

(2) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of paragraphs 1 and 2 of subdivision b.

b. The owner or operator shall meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

(1) The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or

other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in section 5.0 to "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(2) The closed-vent system and control device shall be designed and operated in accordance with the requirements of section 33-24-05-457.

c. Safety devices, as defined in section 33-24-05-451, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of subdivision a.

d. Owners and operators using container level 3 controls in accordance with the provisions of sections 33-24-05-450 through 33-24-05-474 shall inspect and monitor the closed-vent systems and control devices as specified in section 33-24-05-457.

e. Owners and operators that use container level 3 controls in accordance with the provisions of sections 33-24-05-450 through 33-24-05-474 shall prepare and maintain the records specified in subsection 4 of section 33-24-05-459.

f. Transfer of hazardous waste in or out of a container using container level 3 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the department considers to meet the requirements of this subdivision include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

6. For the purpose of compliance with paragraph 1 of subdivision a of subsection 3 or paragraph 1 of subdivision a of subsection 4, containers shall be used that meet the applicable department of transportation regulations on packaging hazardous materials for transportation as follows:

a. The container meets the applicable requirements specified in 49 CFR part 178 - Specifications for Packaging or 49 CFR part 179 - Specifications for Tank Cars.

b. Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B - Exemptions; 49 CFR part 172 - Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173 - Shippers - General Requirements for Shipments and Packages; and 49 CFR part 180 - Continuing Qualification and Maintenance of Packagings.

c. For the purpose of complying with sections 33-24-05-450 through 33-24-05-474, no exceptions to the 49 CFR part 178 or 179 regulations are allowed except as provided for in subdivision d.

d. For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with sections 33-24-05-450 through 33-24-05-474, an

owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

7. To determine compliance with the no detectable organic emissions requirement of paragraph 2 of subdivision a of subsection 4, the procedure specified in subsection 4 of section 33-24-05-453 shall be used.

   a. Each potential leak interface (for example, a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to, the interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

   b. The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous waste expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.

8. Procedure for determining a container to be vapor-tight using method 27 of 40 CFR part 60, appendix A, for the purpose of complying with paragraph 3 of subdivision a of subsection 4.

   a. The test shall be performed in accordance with method 27 of 40 CFR part 60, appendix A.

   b. A pressure measurement device shall be used that has a precision of plus or minus 0.1 inch [plus or minus 2.5 millimeters] water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

   c. If the test results determined by method 27 indicate that the container sustains a pressure change less than or equal to seven hundred fifty pascals within five minutes after it is pressurized to a minimum of four thousand five hundred pascals, then the container is determined to be vapor-tight.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-457. Standards - Closed-vent systems and control devices.

1. This section applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of sections 33-24-05-450 through 33-24-05-474.

2. The closed-vent system shall meet the following requirements:

   a. The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in subsection 3.

   b. The closed-vent system shall be designed and operated in accordance with the requirements specified in subsection 11 of section 33-24-05-403.

   c. In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in paragraph 1 or a seal or locking device as specified in paragraph 2. For the purpose of complying with

this subdivision, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.

(1) If a flow indicator is used to comply with this subdivision, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this subdivision, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.

(2) If a seal or locking device is used to comply with this subdivision, the device shall be placed on the mechanism by which the bypass device position is controlled (for example, valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

d. The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in subsection 12 of section 33-24-05-403.

3. The control device shall meet the following requirements:

a. The control device shall be one of the following devices:

(1) A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least ninety-five percent by weight;

(2) An enclosed combustion device designed and operated in accordance with the requirements of subsection 3 of section 33-24-05-403; or

(3) A flare designed and operated in accordance with the requirements of subsection 4 of section 33-24-05-403.

b. The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this section shall comply with the requirements specified in paragraphs 1 through 6.

(1) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraph 1, 2, or 3 of subdivision a, as applicable, shall not exceed two hundred forty hours per year.

(2) The specifications and requirements in paragraphs 1, 2, and 3 of subdivision a for control devices do not apply during periods of planned routine maintenance.

(3) The specifications and requirements in paragraphs 1, 2, and 3 of subdivision a for control devices do not apply during a control device system malfunction.

(4) The owner or operator shall demonstrate compliance with the requirements of paragraph 1 (for example, planned routine maintenance of a control device, during which the control device does not meet the specifications of paragraph 1, 2, or 3 of subdivision a, as applicable, shall not exceed two hundred forty hours per year) by recording the information specified in paragraph 5 of subdivision a of subsection 5 of section 33-24-05-459.

(5) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.

(6) The owner or operator shall operate the closed-vent system such that gases, vapors, or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (for example, periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, or fumes, or any combination, to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

c. The owner or operator using a carbon adsorption system to comply with subdivision a shall operate and maintain the control device in accordance with the following requirements:

(1) Following the initial startup of the control device, all activated carbon in the control device shall be replaced with fresh carbon on a regular basis in accordance with the requirements of subsection 7 or 8 of section 33-24-05-403.

(2) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of subsection 14 of section 33-24-05-403, regardless of the average volatile organic concentration of the carbon.

d. An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condensor, or carbon adsorption system to comply with subdivision a shall operate and maintain the control device in accordance with the requirements of subsection 10 of section 33-24-05-403.

e. The owner or operator shall demonstrate that a control device achieves the performance requirements of subdivision a as follows:

(1) An owner or operator shall demonstrate using either a performance test as specified in paragraph 3 or a design analysis as specified in paragraph 4 the performance of each control device except for the following:

(a) A flare;

(b) A boiler or process heater with a design heat input capacity of 44 megawatts or greater;

(c) A boiler or process heater into which the vent stream is introduced with the primary fuel;

(d) A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under chapter 33-24-06 and has designed and operates the unit in accordance with the requirements of sections 33-24-05-525 through 33-24-05-549; or

(e) A boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with sections 33-24-05-525 through 33-24-05-549.

(2) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in subsection 5 of section 33-24-05-403.

(3) For a performance test conducted to meet the requirements of paragraph 1, the owner or operator shall use the test methods and procedures specified in subdivisions a through d of subsection 3 of section 33-24-05-404.

(4) For a design analysis conducted to meet the requirements of paragraph 1, the design analysis shall meet the requirements specified in paragraph 3 of subdivision d of subsection 2 of section 33-24-05-405.

(5) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of subdivision a based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.

f. If the owner or operator and the department do not agree on a demonstration of control device performance using a design analysis, then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of paragraph 3 of subdivision e. The department may choose to have an authorized representative observe the performance test.

g. The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subdivision b of subsection 6 and subsection 12 of section 33-24-05-403. The readings from each monitoring device required by subdivision b of subsection 6 of section 33-24-05-403 shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of section 33-24-05-457.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-458. Inspection and monitoring requirements.

1. The owner or operator shall inspect and monitor air emission control equipment used to comply with sections 33-24-05-450 through 33-24-05-474 in accordance with the applicable requirements specified in sections 33-24-05-454 through 33-24-05-457.

2. The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by subsection 1. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under section 33-24-05-06.

History: Effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-459. Recordkeeping requirements.

1. Each owner or operator of a facility subject to requirements in sections 33-24-05-450 through 33-24-05-474 shall record and maintain the information specified in subsections 2 through 10, as applicable to the facility. Except for air emission control equipment design documentation and information required by subsections 9 and 10, records required by this section shall be maintained in the operating record for a minimum of three years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by subsections 9 and 10 shall be maintained in the operating record for as long as the waste

management unit is not using air emission controls specified in sections 33-24-05-454 through 33-24-05-457 in accordance with the conditions specified in subsection 4 or subdivision g of subsection 2 of section 33-24-05-450, respectively.

2. The owner or operator of a tank using air emission controls in accordance with the requirements of section 33-24-05-454 shall prepare and maintain records for the tank that include the following information:

   a. For each tank using air emission controls in accordance with the requirements of section 33-24-05-454, the owner or operator shall record:

      (1) A tank identification number (or other unique identification description as selected by the owner or operator).

      (2) A record for each inspection required by section 33-24-05-454 that includes the following information:

         (a) Date inspection was conducted.

         (b) For each defect detected during the inspection, the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of section 33-24-05-454, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

   b. In addition to the information required by subdivision a, the owner or operator shall record the following information, as applicable to the tank:

      (1) The owner or operator using a fixed roof to comply with the tank level 1 control requirements specified in subsection 3 of section 33-24-05-454 shall prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of subsection 3 of section 33-24-05-454. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

      (2) The owner or operator using an internal floating roof to comply with the tank level 2 control requirements specified in subsection 5 of section 33-24-05-454 shall prepare and maintain documentation describing the floating roof design.

      (3) Owners and operators using an external floating roof to comply with the tank level 2 control requirements specified in subsection 6 of section 33-24-05-454 shall prepare and maintain the following records:

         (a) Documentation describing the floating roof design and the dimensions of the tank.

         (b) Records for each seal gap inspection required by subdivision c of subsection 6 of section 33-24-05-454 describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in subdivision a of subsection 6 of section 33-24-05-454, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

(4) Each owner or operator using an enclosure to comply with the tank level 2 control requirements specified in subsection 9 of section 33-24-05-454 shall prepare and maintain the following records:

(a) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B.

(b) Records required for the closed-vent system and control device in accordance with the requirements of subsection 5.

3. The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of section 33-24-05-455 shall prepare and maintain records for the surface impoundment that include the following information:

a. A surface impoundment identification number (or other unique identification description as selected by the owner or operator).

b. Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in subsection 3 of section 33-24-05-455.

c. A record for each inspection required by section 33-24-05-455 that includes the following information:

(1) Date inspection was conducted.

(2) For each defect detected during the inspection the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of subsection 6 of section 33-24-05-455, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

d. For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the record specified in subsection 5.

4. The owner or operator of containers using container level 3 air emission controls in accordance with the requirements of section 33-24-05-456 shall prepare and maintain records that include the following information:

a. Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B.

b. Records required for the closed-vent system and control device in accordance with the requirements of subsection 5.

5. The owner or operator using a closed-vent system and control device in accordance with the requirements of section 33-24-05-457 shall prepare and maintain records that include the following information:

a. Documentation for the closed-vent system and control device that includes:

(1) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in paragraph 2 or by performance tests as specified in paragraph 3 when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.

(2) If a design analysis is used, then design documentation as specified in subdivision d of subsection 2 of section 33-24-05-405. The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with paragraph 3 of subdivision d of subsection 2 of section 33-24-05-405 and certification by the owner or operator that the control equipment meets the applicable specifications.

(3) If performance tests are used, then a performance test plan as specified in subdivision c of subsection 2 of section 33-24-05-405 and all test results.

(4) Information as required by subdivisions a and b of subsection 3 of section 33-24-05-405, as applicable.

(5) An owner or operator shall record, on a semiannual basis, the information specified in subparagraphs a and b for those planned routine maintenance operations that would require the control device not to meet the requirements of paragraph 1, 2, or 3 of subdivision a of subsection 3 of section 33-24-05-457, as applicable.

(a) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next six-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(b) A description of the planned routine maintenance that was performed for the control device during the previous six-month period. This description shall include the type of maintenance performed and the total number of hours during those six months that the control device did not meet the requirements of paragraph 1, 2, or 3 of subdivision a of subsection 3 of section 33-24-05-457, as applicable, due to planned routine maintenance.

(6) An owner or operator shall record the information specified in subparagraphs a through c for those unexpected control device system malfunctions that would require the control device not to meet the requirements of paragraph 1, 2, or 3 of subdivision a of subsection 3 of section 33-24-05-457, as applicable.

(a) The occurrence and duration of each malfunction of the control device system.

(b) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

(c) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(7) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with paragraph 2 of subdivision c of subsection 3 of section 33-24-05-457.

6. The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of subsection 3 of section 33-24-05-452 shall prepare and maintain the following records, as applicable:

   a. For tanks, surface impoundments, and containers exempted under the hazardous waste organic concentration conditions specified in subdivision a of subsection 3 or paragraphs 1 through 6 of subdivision b of subsection 3 of section 33-24-05-452, the owner or operator shall record information used for each waste determination (such as, test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of section 33-24-05-453.

   b. For tanks, surface impoundments, or containers exempted under the provisions of paragraph 7 or 8 of subdivision b of subsection 3 of section 33-24-05-452, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

7. An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to subsection 12 of section 33-24-05-454 or subsection 7 of section 33-24-05-455 shall record in a log that is kept in the facility operating record the following information: the identification numbers for waste management units with covers that are designated as "unsafe to inspect and monitor", the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.

8. The owner or operator of a facility that is subject to sections 33-24-05-450 through 33-24-05-474 and to the control device standards in 40 CFR part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable sections of sections 33-24-05-450 through 33-24-05-474 by documentation either pursuant to sections 33-24-05-450 through 33-24-05-474, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR part 60 or 61 duplicates the documentation required by this section.

9. For each tank or container not using air emission controls specified in sections 33-24-05-454 through 33-24-05-457 in accordance with the conditions specified in subsection 4 of section 33-24-05-450, the owner or operator shall record and maintain the following information:

   a. A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in subdivision a of subsection 4 of section 33-24-05-450.

   b. A description of how the hazardous waste containing the organic peroxide compounds identified in subdivision a are managed at the facility in tanks and containers. This description shall include:

      (1) For tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank a facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

      (2) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe a facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

c. An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in subdivision a in the tanks and containers as described in subdivision b would create an undue safety hazard if the air emission controls, as required under sections 33-24-05-454 through 33-24-05-457, are installed and operated on these waste management units. This explanation shall include the following information:

(1) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain how use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under sections 33-24-05-450 through 33-24-05-474, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(2) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain how use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls as allowed under sections 33-24-05-450 through 33-24-05-474, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

10. For each hazardous waste management unit not using air emission controls specified in sections 33-24-05-454 through 33-24-05-457 in accordance with the requirements of subdivision g of subsection 2 of section 33-24-05-450, the owner and operator shall record and maintain the following information:

a. Certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, 61, or 63.

b. Identification of the specific requirements codified under 40 CFR part 60, 61, or 63 with which the waste management unit is in compliance.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-460. Reporting requirements.

1. Each owner or operator managing hazardous waste in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of subsection 3 of section 33-24-05-452 shall report to the department each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the conditions specified in subdivision a or b of subsection 3 of section 33-24-05-452, as applicable. Examples of such occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than five hundred parts per million weight at the point of waste origination; or placing in the waste management unit a treated hazardous waste of which the organic content has been reduced by an organic destruction or removal process

that fails to achieve the applicable conditions specified in paragraphs 1 through 6 of subdivision b of subsection 3 of section 33-24-05-452. The owner or operator shall submit a written report within fifteen calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

2. Each owner or operator using air emission controls on a tank in accordance with the requirements of subsection 3 of section 33-24-05-454 shall report to the department each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions specified in subsection 2 of section 33-24-05-454. The owner or operator shall submit a written report within fifteen calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

3. Each owner or operator using a control device in accordance with the requirements of section 33-24-05-457 shall submit a semiannual written report to the department except as provided for in subsection 4. The written report must be signed and dated by the owner or operator or that person's designated representative and shall include the identification number, facility name and address, an explanation why the control device could not be returned to compliance within twenty-four hours, and actions taken to correct the noncompliance and shall describe each occurrence during the previous six-month period when either:

   a. A control device is operated continuously for twenty-four hours or longer in noncompliance with the applicable operating values defined in subdivision d of subsection 3 of section 33-24-05-405; or

   b. A flare is operated with visible emissions for five minutes or longer in a two-hour period, as defined in subsection 4 of section 33-24-05-403.

4. A report to the department in accordance with the requirements of subsection 3 is not required for a six-month period during which all control devices subject to sections 33-24-05-450 through 33-24-05-474 are operated by the owner or operator such that:

   a. During no period of twenty-four hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in subdivision d of subsection 3 of section 33-24-05-405; and

   b. No flare was operated with visible emissions for five minutes or longer in a two-hour period, as defined in subsection 4 of section 33-24-05-403.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-461. [Reserved]

33-24-05-462. [Reserved]

33-24-05-463. [Reserved]

33-24-05-464. [Reserved]

33-24-05-465. [Reserved]

33-24-05-466. [Reserved]

33-24-05-467. [Reserved]

33-24-05-468. [Reserved]

33-24-05-469. [Reserved]

33-24-05-470. [Reserved]

33-24-05-471. [Reserved]

33-24-05-472. [Reserved]

33-24-05-473. [Reserved]

33-24-05-474. [Reserved]

33-24-05-475. Applicability to containment buildings.

The requirements of sections 33-24-05-475 through 33-24-05-500 apply to owners or operators who store or treat hazardous waste in units designed and operated under section 33-24-05-476. The owner or operator is not subject to the definition of land disposal in Resource Conservation and Recovery Act section 3004(k) provided that the unit:

1. Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

2. Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling equipment within the unit;

3. If the unit is used to manage liquids, has:

    a. A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

    b. A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

c. A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time, unless the unit has been granted a variance from the secondary containment system requirements under subdivision d of subsection 2 of section 33-24-05-476;

4. Has controls sufficient to prevent fugitive dust emissions to meet the no visible emission standard in paragraph 4 of subdivision a of subsection 3 of section 33-24-05-476; and

5. Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-476. Design and operating standards.

1. All containment buildings must comply with the following design standards:

   a. The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements (for example, precipitation, wind, run-on) and to assure containment of managed wastes.

   b. The floor and containment walls of the unit, including the secondary containment system if required under subsection 2, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The department will consider standards established by professional organizations generally recognized by the industry such as the American concrete institute or the American society of testing materials in judging the structural integrity requirements of this subsection. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for lightweight doors and windows that meet these criteria:

      (1) They provide an effective barrier against fugitive dust emissions under paragraph 4 of subdivision a of subsection 3; and

      (2) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

   c. Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

   d. A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

2. For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:

   a. A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (for example, a geomembrane covered by a concrete wear surface).

   b. A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building:

      (1) The primary barrier must be sloped to drain liquids to the associated collection system; and

      (2) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time.

   c. A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

      (1) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:

         (a) Constructed with a bottom slope of one percent or more; and

         (b) Constructed of a granular drainage material with a hydraulic conductivity of $1x10^{-2}$ centimeters per second or more and a thickness of twelve inches [30.5 centimeters] or more, or constructed of synthetic or geonet drain materials with a transmissivity of $3x10^{-5}$ square meters per second.

      (2) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

      (3) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of subdivision a of subsection 5 of section 33-24-05-106. In addition, the containment building must meet the requirements of subsection 2 of section 33-24-05-106 and subdivisions a and b of subsection 3 of section 33-24-05-106 to be considered an acceptable secondary containment system for a tank.)

   d. For existing units other than ninety-day generator units, the department may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of sections 33-24-05-475 through 33-24-05-500. In making this demonstration, the owner or operator must:

      (1) Provide written notice to the department of the request by November 16, 1992. This notification must describe the unit and its operating practices with specific reference

to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

(2) Respond to any comments from the department on these plans within thirty days; and

(3) Fulfill the terms of the revised plans, if such plans are approved by the department.

3. Owners or operators of all containment buildings must:

a. Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(1) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

(2) Maintain the level of the stored or treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;

(3) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

(4) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see 40 CFR part 60, appendix A, method 22 Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares). In addition, all associated particulate collection devices (for example, fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices (see 40 CFR part 60 subpart 292 for guidance). This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

b. Obtain and keep onsite a certification by a qualified professional engineer that the containment building design meets the requirements of subsections 1, 2, and 3.

c. Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator must repair the condition promptly, in accordance with the following procedures.

(1) Upon detection of a condition that has led to a release of hazardous waste (for example, upon detection of leakage from the primary barrier) the owner or operator must:

(a) Enter a record of the discovery in the facility operating record;

(b) Immediately remove the portion of the containment building affected by the condition from service;

(c) Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

(d) Within seven days after the discovery of the condition, notify the department of the condition, and within fourteen working days, provide a written notice to the

department with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(2) The department will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(3) Upon completing all repairs and cleanup the owner or operator must notify the department in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with subparagraph d of paragraph 1 of subdivision c of subsection 3.

d. Inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

4. For containment buildings that contain both areas with and without secondary containment, the owner or operator must:

a. Design and operate each area in accordance with the requirements enumerated in subsections 1, 2, and 3;

b. Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

c. Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

5. Notwithstanding any other provision of sections 33-24-05-475 through 33-24-05-500, the department may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-477. Closure and postclosure care.

1. At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners for example) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless subsection 4 of section 33-24-02-03 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in sections 33-24-05-59 through 33-24-05-88.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection 1, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator must close the

facility and perform postclosure care in accordance with the closure and postclosure requirements that apply to landfills (section 33-24-05-180). In addition, for the purposes of closure, postclosure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in sections 33-24-05-59 through 33-24-05-88.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-478. [Reserved]

33-24-05-479. [Reserved]

33-24-05-480. [Reserved]

33-24-05-481. [Reserved]

33-24-05-482. [Reserved]

33-24-05-483. [Reserved]

33-24-05-484. [Reserved]

33-24-05-485. [Reserved]

33-24-05-486. [Reserved]

33-24-05-487. [Reserved]

33-24-05-488. [Reserved]

33-24-05-489. [Reserved]

33-24-05-490. [Reserved]

33-24-05-491. [Reserved]

33-24-05-492. [Reserved]

33-24-05-493. [Reserved]

33-24-05-494. [Reserved]

33-24-05-495. [Reserved]

33-24-05-496. [Reserved]

33-24-05-497. [Reserved]

33-24-05-498. [Reserved]

33-24-05-499. [Reserved]

33-24-05-500. [Reserved]

33-24-05-501. Applicability to drip pads.

1. The requirements of sections 33-24-05-501 through 33-24-05-524 apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and surface water runoff, or any combination, to an associated collection system. Existing drip pads are those constructed before December 6, 1990, and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 6, 1990. All other drip pads are new drip pads. The requirement of subdivision c of subsection 2 of section 33-24-05-504 to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992, except for those constructed after December 24, 1992, for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992.

2. The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither runoff nor run-on is generated is not subject to regulation under subsection 5 or 6 of section 33-24-05-504.

3. The requirements of sections 33-24-05-501 through 33-24-05-524 are not applicable to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan must describe how the owner or operator will do the following:

    a. Clean up the drippage;

    b. Document the cleanup of the drippage;

    c. Retain documents regarding cleanup for three years; and

    d. Manage the contaminated media in a manner consistent with federal regulations.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-502. Assessment of existing drip pad integrity.

1. For each existing drip pad as defined in section 33-24-05-501, the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of sections 33-24-05-501 through 33-24-05-524, except the requirements for liners and leak detection systems of subsection 2 of section 33-24-05-504. No later than the effective date of this rule, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad,

reviewed and certified by a qualified professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of section 33-24-05-504 are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards of section 33-24-05-504, except the standards for liners and leak detection systems, specified in subsection 2 of section 33-24-05-504.

2. The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of subsection 2 of section 33-24-05-504, and submit the plan to the department no later than two years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of section 33-24-05-504. The plan must be reviewed and certified by a qualified professional engineer.

3. Upon completion of all upgrades, repairs, and modifications, the owner or operator must submit to the department, the as-built drawings for the drip pad together with a certification by a qualified professional engineer attesting that the drip pad conforms to the drawings.

4. If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of subsection 13 of section 33-24-05-504 or close the drip pad in accordance with section 33-24-05-506.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-503. Design and installation of new drip pads.

Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following:

1. All of the requirements of sections 33-24-05-504 (except subdivision d of subsection 1 of section 33-24-05-504), 33-24-05-505, and 33-24-05-506; or

2. All of the requirements of sections 33-24-05-504 (except subsection 2 of section 33-24-05-504), 33-24-05-505, and 33-24-05-506.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-504. Design and operating requirements.

1. Drip pads must:

   a. Be constructed of nonearthen materials, excluding wood and nonstructurally supported asphalt;

   b. Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;

   c. Have a curb or berm around the perimeter;

   d. Drip pads must meet and have on file the following:

      (1) Have a hydraulic conductivity of less than or equal to $1x10^{-7}$ centimeters per second (for example, existing concrete drip pads must be sealed, coated, or covered with a

surface material with a hydraulic conductivity of less than or equal to $1x10^{-7}$ centimeters per second), such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with subsection 2 of section 33-24-05-503 instead of subsection 1 of section 33-24-05-503.

(2) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated, and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of this section, except for subsection 2.

e. Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of daily operations (for example, variable and moving loads such as vehicle traffic, movement of wood, etc.).

Note: The department will generally consider applicable standards established by professional organizations generally recognized by the industry such as the American concrete institute (ACI) or the American society of testing and materials (ASTM) in judging the structural integrity requirement of this subdivision.

2. If an owner or operator elects to comply with subsection 1 of section 33-24-05-503 instead of subsection 2 of section 33-24-05-503, the drip pad must have:

a. A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and to prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility. The liner must be:

(1) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);

(2) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(3) Installed to cover all surrounding earth that could come in contact with the waste or leakage.

b. A leakage detection system immediately above the liner that is designed, constructed, maintained, and operated to detect leakage from the drip pad. The leakage detection system must be:

(1) Constructed of materials that are:

(a) Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

(b) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad;

(2) Designed and operated to function without clogging through the scheduled closure of the drip pad; and

(3) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

c. A leakage collection system immediately above the liner that is designed, constructed, maintained, and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.

3. Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

Note: See subsection 13 of section 33-24-05-504 for remedial action required if deterioration or leakage is detected.

4. The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent runoff.

5. Unless protected by a structure, as described in subsection 2 of section 33-24-05-501, the owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a twenty-four-hour, twenty-five-year storm, unless the system has sufficient excess capacity to contain any runoff that might enter the system.

6. Unless protected by a structure or cover as described in subsection 2 of section 33-24-05-501, the owner or operator, must design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a twenty-four-hour, twenty-five-year storm.

7. The drip pad must be evaluated to determine that it meets the requirements of subsections 1 through 6 and the owner or operator must obtain a statement from a qualified professional engineer certifying that the drip pad design meets the requirements of this section.

8. Drippage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

9. The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log. The owner or operator must determine if the residues are hazardous as per section 33-24-03-02 and, if so, must manage them under article 33-24.

10. Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

11. After being removed from the treatment vessel, treated wood from pressure and nonpressure processes must be held on the drip pad until drippage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

12. Collection and holding units associated with run-on and runoff control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

13. Throughout the active life of the drip pad and as specified in the permit, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

    a. Upon detection of a condition that may have caused or has caused a release of hazardous waste (for example, upon detection of leakage in the leak detection system), the owner or operator must:

        (1) Enter a record of the discovery in the facility operating log;

        (2) Immediately remove the portion of the drip pad affected by the condition from service;

        (3) Determine what steps must be taken to repair the drip pad and clean up any leakage from below the drip pad, and establish a schedule for accomplishing the repairs; and

        (4) Within twenty-four hours after discovery of the condition, notify the department of the condition and, within ten working days, provide written notice to the department with a description of the steps that will be taken to repair the drip pad and clean up any leakage, and the schedule for accomplishing this work.

    b. The department will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

    c. Upon completing all repairs and clean-up, the owner or operator must notify the department in writing and provide a certification signed by an independent, qualified registered professional engineer, that the repairs and clean-up have been completed according to the written plan submitted in accordance with paragraph 4 of subdivision a.

14. Should a permit be necessary, the department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

15. The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-505. Inspections.

1. During construction or installation, liners and cover systems (for example, membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (for example, holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of section 33-24-05-504 by a qualified professional engineer. This certification must be maintained at the facility as part of the facility operating record. After installation, liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

2. While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

   a. Deterioration, malfunctions, or improper operation of run-on and runoff control systems.

   b. The presence of leakage in and proper functioning of leak detection system.

   c. Deterioration or cracking of the drip pad surface.

   Note: See subsection 13 of section 33-24-05-504 for remedial action required if deterioration or leakage is detected.

History: Effective January 1, 1994; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-506. Closure.

1. At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection 1, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator must close the facility and perform postclosure care in accordance with closure and postclosure care requirements that apply to landfills in section 33-24-05-180. For permitted units, the requirement to have a permit continues throughout the postclosure period. In addition, for the purpose of closure, postclosure, and financial responsibility, such a drip pad is then considered to be landfill, and the owner or operator must meet all of the requirements for landfills specified in sections 33-24-05-59 through 33-24-05-88.

3. Drip pad:

   a. The owner or operator of an existing drip pad, as defined in section 33-24-05-501, that does not comply with the liner requirements of subdivision a of subsection 2 of section 33-24-05-504 must:

      (1) Include in the closure plan for the drip pad under section 33-24-05-61 both a plan for complying with subsection 1 and a contingent plan for complying with subsection 2 in case not all contaminated subsoils can be practicably removed at closure; and

(2) Prepare a contingent postclosure plan under section 33-24-05-67 for complying with subsection 2 in case not all contaminated subsoils can be practicably removed at closure.

b. The cost estimates calculated under sections 33-24-05-61 and 33-24-05-76 for closure and postclosure care of a drip pad must include the cost of complying with the contingent closure plan and the contingent postclosure plan, but are not required to include the cost of expected closure under subsection 1.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-507. [Reserved]

33-24-05-508. [Reserved]

33-24-05-509. [Reserved]

33-24-05-510. [Reserved]

33-24-05-511. [Reserved]

33-24-05-512. [Reserved]

33-24-05-513. [Reserved]

33-24-05-514. [Reserved]

33-24-05-515. [Reserved]

33-24-05-516. [Reserved]

33-24-05-517. [Reserved]

33-24-05-518. [Reserved]

33-24-05-519. [Reserved]

33-24-05-520. [Reserved]

33-24-05-521. [Reserved]

33-24-05-522. [Reserved]

33-24-05-523. [Reserved]

33-24-05-524. [Reserved]

33-24-05-525. Applicability to hazardous waste burned in boilers and industrial furnaces.

1. The regulations of sections 33-24-05-525 through 33-24-05-549 apply to hazardous waste burned or processed in a boiler or industrial furnace (as defined in section 33-24-01-04) irrespective of the purpose of burning or processing, except as provided by subsections 2, 3, 4, 7, and 8. In sections 33-24-05-525 through 33-24-05-549, the term "burn" means burning for energy recovery or destruction, or processing for materials recovery or as an ingredient. The emissions standards of sections 33-24-05-529 through 33-24-05-532 apply to facilities operating under interim status or under a hazardous waste operating permit as specified in sections 33-24-05-527 and 33-24-05-528.

2. Integration of the maximum achievable control technology standards.

   a. Except as provided by subdivisions b through d, the standards of sections 33-24-05-525 through 33-24-05-549 do not apply to a new hazardous waste boiler or industrial furnace unit that becomes subject to hazardous waste permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing hazardous waste boiler or industrial furnace unit demonstrates compliance with the maximum achievable control technology requirements of 40 CFR part 63, subpart EEE, by conducting a comprehensive performance test and submitting to the department a notification of compliance under 40 CFR sections 63.1207(j) and 63.1210(d) documenting compliance with the requirements of 40 CFR part 63, subpart EEE. Nevertheless, even after this demonstration of compliance with the maximum achievable control technology standards, hazardous waste permit conditions that were based on the standards of sections 33-24-05-525 through 33-24-05-549 will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.

   b. The following standards continue to apply:

      (1) If a permittee elects to comply with paragraph 1 of subdivision a of subsection 1 of section 33-24-06-100 to minimize emissions of toxic compounds from startup, shutdown, and malfunction events, subdivision a of subsection 5 of section 33-24-05-527 requiring operations in accordance with the operating requirements specified in the permit at all times that hazardous waste is in the unit, and paragraph 3 of subdivision b of subsection 5 of section 33-24-05-527 requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes. These provisions apply only during startup, shutdown, and malfunction events;

      (2) The closure requirements of subdivision k of subsection 5 of section 33-24-05-527 and subsection 12 of section 33-24-05-528;

      (3) The standards for direct transfer of section 33-24-05-536;

      (4) The standards for regulation of residues of section 33-24-05-537; and

      (5) The applicable requirements of sections 33-24-05-01 through 33-24-05-88, 33-24-05-420 through 33-24-05-474, and subsection 5 of section 33-24-06-16.

   c. The owner or operator of a boiler or hydrochloric acid production furnace that is an area source under 40 CFR section 63.2 and the owner or operator elects not to comply with the emission standards under 40 CFR sections 63.1216, 63.1217, and 63.1218 for

particulate matter, semivolatile and low volatile metals, and total chlorine, the owner or operator also remains subject to:

(1) Section 33-24-05-530 - Standards to control particulate matter;

(2) Section 33-24-05-531 - Standards to control metals emissions, except for mercury; and

(3) Section 33-24-05-532 - Standards to control hydrogen chloride and chlorine gas.

d. The particulate matter standard of section 33-24-05-530 remains in effect for boilers that elect to comply with the alternative to the particulate matter standard under 40 CFR sections 63.1216(e) and 63.1217(e).

3. The following hazardous wastes and facilities are not subject to regulation under sections 33-24-05-525 through 33-24-05-549:

a. Used oil burned for energy recovery that is also hazardous waste solely because it exhibits a characteristic of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14. Such used oil is subject to regulation under sections 33-24-05-600 through 33-24-05-689;

b. Gas recovered from hazardous or solid waste landfills when such gas is burned for energy recovery;

c. Hazardous wastes that are exempt from regulation under section 33-24-02-04 and paragraphs 4 through 6 of subdivision c of subsection 1 of section 33-24-02-06, and hazardous wastes that are subject to the special requirements for conditionally exempt small quantity generators under section 33-24-02-05; and

d. Coke ovens, if the only hazardous waste burned is hazardous waste number K087, decanter tank tar sludge from coking operations.

4. Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces, but not including cement kilns, aggregate kilns, or halogen acid furnaces burning hazardous waste) that process hazardous waste solely for metal recovery are conditionally exempt from regulation under sections 33-24-05-525 through 33-24-05-549, except for sections 33-24-05-526 and 33-24-05-537.

a. To be exempt from sections 33-24-05-527 through 33-24-05-536, an owner or operator of a metal recovery furnace or mercury recovery furnace must comply with the following requirements, except that an owner or operator of a lead or a nickel-chromium recovery furnace, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, must comply with the requirements of subdivision c, and owners or operators of lead recovery furnaces that are subject to regulation under the secondary lead smelting national emission standard for hazardous air pollutants must comply with the requirements of subsection 8:

(1) Provide a one-time written notice to the department indicating the following:

(a) The owner or operator claims exemption under this subsection;

(b) The hazardous waste is burned solely for metal recovery consistent with the provisions of subdivision b;

(c) The hazardous waste contains recoverable levels of metals; and

(d) The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this subsection;

(2) Sample and analyze the hazardous waste and other feedstocks as necessary to comply with the requirements of this subsection by using appropriate methods; and

(3) Maintain at the facility for at least three years records to document compliance with the provisions of this subsection, including limits on levels of toxic organic constituents and British thermal unit value of the waste, and levels of recoverable metals in the hazardous waste compared to normal nonhazardous waste feedstocks.

b. A hazardous waste meeting either of the following criteria is not processed solely for metal recovery:

(1) The hazardous waste has a total concentration of organic compounds listed in appendix V of chapter 33-24-02 exceeding five hundred parts per million by weight, as-fired, and so is considered to be burned for destruction. The concentration of organic compounds in a waste as-generated may be reduced to the five hundred parts per million limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the five hundred parts per million limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the records required by paragraph 3 of subdivision a; or

(2) The hazardous waste has a heating value of five thousand British thermal units per pound or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the five thousand British thermal units per pound limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the five thousand British thermal units per pound limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the records required by paragraph 3 of subdivision a.

c. To be exempt from sections 33-24-05-527 through 33-24-05-536, an owner or operator of a lead or nickel-chromium or mercury recovery furnace (except for owners or operators of lead recovery furnaces subject to regulation under the secondary lead smelting national emission standards for hazardous air pollutants), or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, must provide a one-time written notice to the department identifying each hazardous waste burned and specifying whether the owner or operator claims an exemption for each waste under this subdivision or subdivision a. The owner or operator must comply with the requirements of subdivision a for those wastes claimed to be exempt under that subdivision and must comply with the requirements below for those wastes claimed to be exempt under subdivision a and must comply with the requirements below for those wastes claimed to be exempt under this subdivision.

(1) The hazardous wastes listed in appendices XXVI, XXVII, and XXVIII of chapter 33-24-05, and baghouse bags used to capture metallic dusts emitted by steel manufacturing are exempt from the requirements of subdivision a, provided that:

(a) A waste listed in appendix XXVI must contain recoverable levels of lead, a waste listed in appendix XXVII must contain recoverable levels of nickel or chromium, a waste listed in appendix XXVIII must contain recoverable levels of mercury and contain less than five hundred parts per million organic constituents listed in appendix V of chapter 33-24-02 and baghouse bags used

to capture metallic dusts emitted by steel manufacturing must contain recoverable levels of metal;

(b) The waste does not exhibit the toxicity characteristic of section 33-24-02-14 for an organic constituent;

(c) The waste is not a hazardous waste listed in sections 33-24-02-15 through 33-24-02-19 because it is listed for an organic constituent as identified in appendix IV of chapter 33-24-02; and

(d) The owner or operator certifies in the one-time notice that hazardous waste is burned under the provisions of subdivision c and that sampling and analysis will be conducted or other information will be obtained as necessary to ensure continued compliance with these requirements. Sampling and analysis shall be conducted according to paragraph 2 of subdivision a and records to document compliance with subdivision c shall be kept for at least three years.

(2) The department may decide on a case-by-case basis that the toxic organic constituents in a material listed in appendix XXVI, XXVII, or XXVIII of chapter 33-24-05 that contains a total concentration of more than five hundred parts per million toxic organic compounds listed in appendix V of chapter 33-24-02, may pose a hazard to human health and the environment when burned in a metal recovery furnace exempt from the requirements of sections 33-24-05-525 through 33-24-05-549. In that situation, after adequate notice and opportunity for comment, the metal recovery furnace will become subject to the requirements of sections 33-24-05-525 through 33-24-05-549 when burning that material. In making the hazard determination, the department will consider the following factors:

(a) The concentration and toxicity of organic constituents in the material;

(b) The level of destruction of toxic organic constituents provided by the furnace; and

(c) Whether the acceptable ambient levels established in appendix XIX or XX of chapter 33-24-05 may be exceeded for any toxic organic compound that may be emitted based on dispersion modeling to predict the maximum annual average offsite ground level concentration.

5. The standards for direct transfer operations under section 33-24-05-536 apply only to facilities subject to the permit standards of section 33-24-05-527 or the interim status standards of section 33-24-05-528.

6. The management standards for residues under section 33-24-05-537 apply to any boiler or industrial furnace burning hazardous waste.

7. Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces) that process hazardous waste for recovery of economically significant amounts of the precious metals gold, silver, platinum, palladium, irridium, osmium, rhodium, or ruthenium, or any combination of these are conditionally exempt from regulation under sections 33-24-05-525 through 33-24-05-549, except for section 33-24-05-537. To be exempt from sections 33-24-05-526 through 33-24-05-536, an owner or operator must:

a. Provide a one-time written notice to the department indicating the following:

(1) The owner or operator claims exemption under this subsection;

(2) The hazardous waste is burned for legitimate recovery of precious metal; and

(3) The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this subsection;

b. Sample and analyze the hazardous waste as necessary to document that the waste contains economically significant amounts of the metals and that the treatment recovers economically significant amounts of precious metals; and

c. Maintain at the facility, for at least three years, records to document that all hazardous wastes burned are burned for recovery of economically significant amounts of precious metal.

8. Starting June 23, 1997, owners or operators of lead recovery furnaces that process hazardous waste for recovery of lead and that are subject to regulation under the secondary lead smelting national emission standards for hazardous air pollutants are conditionally exempt from regulation under sections 33-24-05-525 through 33-24-05-549, except for section 33-24-05-526. To be exempt, an owner or operator must provide a one-time notice to the department identifying each hazardous waste burned and specifying that the owner or operator claims an exemption under this subsection. The notice also must state that the waste burned has a total concentration of nonmetal compounds listed in appendix V of chapter 33-24-02 of less than five hundred parts per million by weight as fired and as provided in paragraph 1 of subdivision b of subsection 4, or is listed in appendix XXVI of chapter 33-24-05.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-10

33-24-05-526. Management prior to burning.

1. **Generators.** Generators of hazardous waste that is burned in a boiler or industrial furnace are subject to chapter 33-24-03.

2. **Transporters.** Transporters of hazardous waste that is burned in a boiler or industrial furnace are subject to chapter 33-24-04.

3. **Storage and treatment facilities.**

a. Owners and operators of facilities that store or treat hazardous waste that is burned in a boiler or industrial furnace are subject to the applicable provisions of sections 33-24-05-01 through 33-24-05-190, sections 33-24-05-300 through 33-24-05-524, sections 33-24-05-550 through 33-24-05-559, sections 33-24-05-800 through 33-24-05-819, sections 33-24-05-950 through 33-24-05-1149, applicable requirements of subsection 5 of section 33-24-06-16, and chapter 33-24-06, except as provided by subdivision b. These standards apply to storage and treatment by the burner as well as to storage and treatment facilities operated by intermediaries (processors, blenders, distributors, etc.) between the generator and the burner.

b. Owners and operators of facilities that burn, in an onsite boiler or industrial furnace exempt from regulation under the small quantity burner provisions of section 33-24-05-533, hazardous waste that they generate are exempt from regulation under sections 33-24-05-01 through 33-24-05-190, sections 33-24-05-300 through 33-24-05-524, sections 33-24-05-550 through 33-24-05-559, sections 33-24-05-800 through 33-24-05-819, sections 33-24-05-950 through 33-24-05-1149, applicable requirements of subsection 5 of section 33-24-06-16, and chapter 33-24-06, applicable to

storage units for those storage units that store mixtures of hazardous waste and the primary fuel to the boiler or industrial furnace in tanks that feed the fuel mixture directly to the burner. Storage of hazardous waste prior to mixing with the primary fuel is subject to regulation as prescribed in subdivision a.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-527. Permit standards for burners.

1. **Applicability.**

   a. General. Owners and operators of boilers and industrial furnaces burning hazardous waste and not operating under interim status must comply with the requirements of this section and subdivision ff of subsection 2 of section 33-24-06-17 and subsection 4 of section 33-24-06-19, unless exempt under the small quantity burner exemption of section 33-24-05-533.

   b. Applicability of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819 standards. Owners and operators of boilers and industrial furnaces that burn hazardous waste are subject to the following provisions of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819, except as provided otherwise by sections 33-24-05-525 through 33-24-05-549:

      (1) Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to section 23-20.3-08 of the North Dakota Century Code or 7003 of the Resource Conservation and Recovery Act;

      (2) In sections 33-24-05-02 through 33-24-05-14, sections 33-24-05-02 through 33-24-05-09;

      (3) In sections 33-24-05-15 through 33-24-05-25, sections 33-24-05-15 through 33-24-05-20;

      (4) In sections 33-24-05-26 through 33-24-05-36, sections 33-24-05-26 through 33-24-05-31;

      (5) In sections 33-24-05-37 through 33-24-05-46, the applicable provisions of sections 33-24-05-38 through 33-24-05-44;

      (6) In sections 33-24-05-47 through 33-24-05-58, sections 33-24-05-47 and 33-24-05-58;

      (7) In sections 33-24-05-59 through 33-24-05-73, sections 33-24-05-60 through 33-24-05-64;

      (8) In sections 33-24-05-74 through 33-24-05-88, 33-24-05-75, 33-24-05-76, 33-24-05-77, and 33-24-05-79 through 33-24-05-81, except that the state and federal governments are exempt from the requirements of sections 33-24-05-74 through 33-24-05-88; and

      (9) Sections 33-24-05-420 through 33-24-05-449, except subsection 1 of section 33-24-05-420.

2. **Hazardous waste analysis.**

   a. The owner or operator must provide an analysis of the hazardous waste that quantifies the concentration of any constituent identified in appendix V of chapter 33-24-02 that may reasonably be expected to be in the waste. Such constituents must be identified and quantified if present, at levels detectable by using appropriate analytical procedures. The appendix V of chapter 33-24-02 constituents excluded from this analysis must be identified and the basis for their exclusion explained. This analysis will be used to provide all information required by sections 33-24-05-525 through 33-24-05-549 and subdivision ff of subsection 2 of section 33-24-06-17 and subsection 4 of section 33-24-06-19 and to enable the permit writer to prescribe such permit conditions as necessary to protect human health and the environment. Such analysis must be included as a portion of the part B permit application, or, for facilities operating under the interim status standards of sections 33-24-05-525 through 33-24-05-549, as a portion of the trial burn plan that may be submitted before the part B application under provisions of subdivision g of subsection 4 of section 33-24-06-19 as well as any other analysis required by the department in preparing the permit. Owners and operators of boilers and industrial furnaces not operating under the interim status standards must provide the information required by subdivision ff of subsection 2 of section 33-24-06-17 or subdivision c of subsection 4 of section 33-24-06-19 in the part B application to the greatest extent possible.

   b. Throughout normal operation, the owner or operator must conduct sampling and analysis as necessary to ensure that the hazardous waste, other fuels, and industrial furnace feedstocks fired into the boiler or industrial furnace are within the physical and chemical composition limits specified in the permit.

3. **Emissions standards.** Owners and operators must comply with emissions standards provided by sections 33-24-05-529 through 33-24-05-532.

4. **Permits.**

   a. The owner or operator may burn only hazardous wastes specified in the facility permit and only under the operating conditions specified under subsection 5, except in approved trial burns under the conditions specified in subsection 4 of section 33-24-06-19.

   b. Hazardous wastes not specified in the permit may not be burned until operating conditions have been specified under a new permit or permit modification, as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with part B of a permit application under subdivision ff of subsection 2 of section 33-24-06-17.

   c. Boilers and industrial furnaces operating under the interim status standards of section 33-24-05-528 are permitted under procedures provided by subdivision g of subsection 4 of section 33-24-06-19.

   d. A permit for a new boiler or industrial furnace (those boilers and industrial furnaces not operating under the interim status standards) must establish appropriate conditions for each of the applicable requirements of this section, including but not limited to allowable hazardous waste firing rates and operating conditions necessary to meet the requirements of subsection 5, in order to comply with the following standards:

      (1) For the period beginning with initial introduction of hazardous waste and ending with initiation of the trial burn, and only for the minimum time required to bring the device to a point of operational readiness to conduct a trial burn, not to exceed a duration of seven hundred twenty hours operating time when burning hazardous waste, the

operating requirements must be those most likely to ensure compliance with the emission standards of section 33-24-05-529 through 33-24-05-532, based on the department's engineering judgment. If the applicant is seeking a waiver from a trial burn to demonstrate conformance with a particular emission standard, the operating requirements during this initial period of operation shall include those specified by the applicable provisions of section 33-24-05-529, 33-24-05-530, 33-24-05-531, or 33-24-05-532. The department may extend the duration of this period for up to seven hundred twenty additional hours when good cause for the extension is demonstrated by the applicant.

(2) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the emissions standards of sections 33-24-05-529 through 33-24-05-532 and must be in accordance with the approved trial burn plan.

(3) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, submission of the trial burn results by the applicant, review of the trial burn results and modification of the facility permit by the department to reflect the trial burn results, the operating requirements must be those likely to ensure compliance with the emission standards sections 33-24-05-529 through 33-24-05-532 based on the department's engineering judgment.

(4) For the remaining duration of the permit, the operating requirements must be those demonstrated in a trial burn or by alternative data specified in subdivision ff of subsection 2 of section 33-24-06-17, as sufficient to ensure compliance with the emissions standards of sections 33-24-05-529 through 33-24-05-532.

5. **Operating requirements.**

a. General. A boiler or industrial furnace burning hazardous waste must be operated in accordance with the operating requirements specified in the permit at all times where there is hazardous waste in the unit.

b. Requirements to ensure compliance with the organic emissions standards:

(1) Destruction and removal efficiency standard. Operating conditions will be specified either on a case-by-case basis for each hazardous waste burned as those demonstrated (in a trial burn or by alternative data as specified in subdivision ff of subsection 2 of section 33-24-06-17) to be sufficient to comply with the destruction and removal efficiency performance standard of subsection 1 of section 33-24-05-529 or as those special operating requirements provided by subdivision d of subsection 1 of section 33-24-05-529 for the waiver of the destruction and removal efficiency trial burn. When the destruction and removal efficiency trial burn is not waived under subdivision d of subsection 1 of section 33-24-05-529, each set of operating requirements will specify the composition of the hazardous waste (including acceptable variations in the physical and chemical properties of the hazardous waste which will not affect compliance with the destruction and removal efficiency performance standard) to which the operating requirements apply. For each such hazardous waste, the permit will specify acceptable operating limits including, but not limited to, the following conditions as appropriate:

(a) Feed rate of hazardous waste and other fuels measured and specified as prescribed in subdivision f;

(b) Minimum and maximum device production rate when producing normal product expressed in appropriate units, measured and specified as prescribed in subdivision f;

(c) Appropriate controls of the hazardous waste firing system;

(d) Allowable variation in boiler or industrial furnace system design or operating procedures;

(e) Minimum combustion gas temperature measured at a location indicative of combustion chamber temperature, measured and specified as prescribed in subdivision f;

(f) An appropriate indicator of combustion gas velocity, measured and specified as prescribed in subdivision f, unless documentation is provided under subsection 4 of section 33-24-06-19 demonstrating adequate combustion gas residence time; and

(g) Such other operating requirements as are necessary to ensure that the destruction and removal efficiency performance standards of subsection 1 of section 33-24-05-529 are met.

(2) Carbon monoxide and hydrocarbon standards. The permit must incorporate a carbon monoxide limit and, as appropriate, a hydrocarbon limit as provided by subsections 2 through 6 of section 33-24-05-529. The permit limits will be specified as follows:

(a) When complying with the carbon monoxide standard of subdivision a of subsection 2 of section 33-24-05-529, the permit limit is one hundred parts per million by volume.

(b) When complying with the alternative carbon monoxide standard under subsection 3 of section 33-24-05-529, the permit limit for carbon monoxide is based on the trial burn and is established as the average overall valid runs of the highest hourly rolling average carbon monoxide level of each run, and the permit limit for hydrocarbon is twenty parts per million by volume (as defined in subdivision a of subsection 3 of section 33-24-05-529), except as provided in subsection 6 of section 33-24-05-529.

(c) When complying with the alternative hydrocarbon limit for industrial furnaces under subsection 6 of section 33-24-05-529, the permit limit for hydrocarbon and carbon monoxide is the baseline level when hazardous waste is not burned as specified by that subsection.

(3) Startup and shutdown. During startup and shutdown of the boiler or industrial furnace, hazardous waste (except waste fed solely as an ingredient under the tier I (or adjusted tier I) feed rate screening limits for metals and chloride/chlorine, and except low risk waste exempt from the trial burn requirements under subdivision e of subsection 1 of section 33-24-05-529, sections 33-24-05-530, 33-24-05-531, and 33-24-05-532) must not be fed into the device unless the device is operating within the conditions of operation specified in the permit.

c. Requirements to ensure conformance with the particulate standard.

(1) Except as provided in paragraphs 2 and 3, the permit shall specify the following operating requirements to ensure conformance with the particulate standard specified in section 33-24-05-530:

(a) Total ash feed rate to the device from hazardous waste, other fuels, and industrial furnace feedstocks, measured and specified as prescribed in subdivision f;

(b) Maximum device production rate when producing normal product expressed in appropriate units, and measured and specified as prescribed in subdivision f;

(c) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(d) Allowable variation in boiler or industrial furnace system design, including any air pollution control system or operating procedures; and

(e) Such other operating requirements as are necessary to ensure that the particulate standard in subsection 1 of section 33-24-05-530 is met.

(2) Permit conditions to ensure conformance with the particulate matter standard shall not be provided for facilities exempt from the particulate matter standard under subsection 2 of section 33-24-05-530.

(3) For cement kilns and lightweight aggregate kilns, permit conditions to ensure compliance with the particulate standard shall not limit the ash content of hazardous waste or other feed materials.

d. Requirements to ensure conformance with the metals emissions standard.

(1) For conformance with the tier I (or adjusted tier I) metals feed rate screening limits of subsection 2 or 5 of section 33-24-05-531, the permit shall specify the following operating requirements:

(a) Total feed rate of each metal in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified under provisions of subdivision f;

(b) Total feed rate of hazardous waste measured and specified as prescribed in subdivision f; and

(c) A sampling and metals analysis program for the hazardous waste, other fuels, and industrial furnace feedstocks;

(2) For conformance with the tier II metals emission rate screening limits under subsection 3 of section 33-24-05-531 and the tier III metals controls under subsection 4 of section 33-24-05-531, the permit shall specify the following operating requirements:

(a) Maximum emission rate for each metal specified as the average emission rate during the trial burn;

(b) Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in paragraph 1 of subdivision f; and

(c) Feed rate of each metal in the following feedstreams, measured and specified as prescribed in subdivision f:

[1] Total feedstreams;

[2] Total hazardous waste feed;

[3] Total pumpable hazardous waste feed;

[4] Total feed rate of chlorine and chloride in total feedstreams measured and specified as prescribed in subdivision f;

[5] Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in subdivision f;

[6] Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in subdivision f;

[7] Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in subdivision f;

[8] Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

[9] Allowable variation in boiler or industrial furnace system design including any air pollution control system or operating procedures; and

[10] Such other operating requirements as are necessary to ensure that the metal standards under subsection 3 of section 33-24-05-531 or subsection 4 of section 33-24-05-531 are met; and

(3) For conformance with an alternative implementation approach approved by the department under subsection 6 of section 33-24-05-531, the permit will specify the following operating requirements:

(a) Maximum emission rate for each metal specified as the average emission rate during the trial burn;

(b) Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in paragraph 1 of subdivision f;

(c) Feed rate of each metal in the following feedstreams, measured and specified as prescribed in subdivision f:

[1] Total hazardous waste feed; and

[2] Total pumpable hazardous waste feed;

(d) Total feed rate of chlorine and chloride in total feedstreams measured and specified prescribed in subdivision f;

(e) Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in subdivision f;

(f) Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in subdivision f;

(g) Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in subdivision f;

(h) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(i) Allowable variation in boiler or industrial furnace system design including any air pollution control system or operating procedures; and

(j) Such other operating requirements as are necessary to ensure that the metals standards under subsection 3 of section 33-24-05-531 or subsection 4 of section 33-24-05-531 are met.

e. Requirements to ensure conformance with the hydrogen chloride and chlorine gas standards.

(1) For conformance with the tier I total chloride and chlorine feed rate screening limits of subdivision a of subsection 2 of section 33-24-05-532, the permit will specify the following operating requirements:

(a) Feed rate of total chloride and chlorine in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified as prescribed in subdivision f;

(b) Feed rate of total hazardous waste measured and specified as prescribed in subdivision f; and

(c) A sampling and analysis program for total chloride and chlorine for the hazardous waste, other fuels, and industrial furnace feedstocks; and

(2) For conformance with the tier II hydrogen chloride and for chlorine emission rate screening limits under subdivision b of subsection 2 of section 33-24-05-532 and the tier III hydrogen chloride and chlorine controls under subsection 3 of section 33-24-05-532, the permit will specify the following operating requirements:

(a) Maximum emission rate for hydrogen chloride and for chlorine specified as the average emission rate during the trial burn;

(b) Feed rate of total hazardous waste measured and specified as prescribed in subdivision f;

(c) Total feed rate of chlorine and chloride in total feedstreams, measured and specified as prescribed in subdivision f;

(d) Maximum device production rate when producing normal product expressed in appropriate units, measured and specified as prescribed in subdivision f;

(e) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(f) Allowable variation in boiler or industrial furnace system design including any air pollution control system or operating procedures; and

(g) Such other operating requirements as are necessary to ensure that the hydrogen chloride and chlorine standards under subdivision b of subsection 2 or subsection 3 of section 33-24-05-532 are met.

f. Measuring parameters and establishing limits based on trial burn data.

(1) General requirements. As specified in subdivisions b through e, each operating parameter shall be measured, and permit limits on the parameter shall be established, according to either of the following procedures:

(a) Instantaneous limits. A parameter may be measured and recorded on an instantaneous basis (for example, the value that occurs at any time) and the permit limit specified as the time-weighted average during all valid runs of the trial burn; or

(b) Hourly rolling average.

[1] The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

[a] A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

[b] An hourly rolling average is the arithmetic mean of the sixty most recent one-minute average values recorded by the continuous monitoring system.

[2] The permit limit for the parameter shall be established based on trial burn data as the average overall valid test runs of the highest hourly rolling average value for each run.

(2) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals (for example, arsenic, beryllium, cadmium, and chromium) and lead may be established either on an hourly rolling average basis as prescribed by paragraph 1 or on (up to) a twenty-four hour rolling average basis. If the owner or operator elects to use an average period from two to twenty-four hours:

(a) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

(b) The continuous monitor shall meet the following specifications:

[1] A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds;

[2] The rolling average for the selected averaging period is defined as the arithmetic mean of one-hour block averages for the averaging period. A one-hour block average is the arithmetic mean of the one-minute averages recorded during the sixty-minute averages recorded during the sixty-minute period beginning at one minute after the beginning of the preceding clock hour; and

(c) The permit limit for the feed rate of each metal shall be established based on trial burn data as the average overall valid test runs of the highest hourly rolling average feed rate for each run.

(3) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (for example, metals, chloride and chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of paragraphs 1 and 2.

(4) Conduct of trial burn testing.

(a) If compliance with all applicable emissions standards of sections 33-24-05-529 through 33-24-05-532 is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards must be as close as possible to the original operating conditions.

(b) Prior to obtaining test data for purposes of demonstrating compliance with the emissions standards of sections 33-24-05-529 through 33-24-05-532 or establishing limits on operating parameters under this section, the facility must operate under trial burn conditions for a sufficient period to reach steady-state operations. The department may determine, however, that industrial furnaces that recycle collected particulate matter back into the furnace and that comply with an alternative implementation approach for metals under subsection 6 of section 33-24-05-531 need not reach steady-state conditions with respect to the flow of metals in the system prior to beginning compliance testing for metals emissions.

(c) Trial burn data on the level of an operating parameter for which a limit must be established in the permit must be obtained during emission sampling for the pollutant(s) (for example, metals, particulate matter, hydrogen chloride, and chlorine organic compounds) for which the parameter must be established as specified by this subsection.

g. General requirements.

(1) Fugitive emissions. Fugitive emissions must be controlled by:

(a) Keeping the combustion zone totally sealed against fugitive emissions;

(b) Maintaining the combustion zone pressure lower than atmospheric pressure; or

(c) An alternate means of control demonstrated (with part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(2) Automatic waste feed cutoff. A boiler or industrial furnace must be operated with a functioning system that automatically cuts off the hazardous waste feed when operating conditions deviate from those established under this section. The department may limit the number of cutoffs per an operating period on a case-by-case basis. In addition:

(a) The permit limit for (the indicator of) minimum combustion chamber temperature must be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber;

(b) Exhaust gases must be ducted to the air pollution control system operated in accordance with the permit requirements while hazardous waste or hazardous waste residues remain in the combustion chamber; and

(c) Operating parameters for which permit limits are established must continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the permit limits. For parameters that may be monitored on an instantaneous basis, the department will establish a minimum period of time after a waste feed cutoff during which

the parameter must not exceed the permit limit before the hazardous waste feed may be restarted.

(3) Changes. A boiler or industrial furnace must cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits as specified in the permit.

h. Monitoring and inspections.

(1) The owner or operator must monitor and record the following, at a minimum, while burning hazardous waste:

(a) If specified by the permit, feed rates and composition of hazardous waste, other fuels, and industrial furnace feedstocks, and feed rates of ash, metals, and total chloride and chlorine;

(b) If specified by the permit, carbon monoxide, hydrocarbons, and oxygen on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with operating requirements specified in paragraph 2 of subdivision b. Carbon monoxide, hydrocarbon, and oxygen monitors must be installed, operated, and maintained in accordance with methods specified in appendix XXIV of chapter 33-24-05; and

(c) Upon the request of the department, sampling and analysis of the hazardous waste (and other fuels and industrial furnace feedstocks as appropriate), residues, and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the applicable standards of sections 33-24-05-529, 33-24-05-530, 33-24-05-531, and 33-24-05-532.

(2) All monitors shall record data in units corresponding to the permit limit unless otherwise specified in the permit.

(3) The boiler or industrial furnace and associated equipment (pumps, valves, pipes, fuel storage tanks, et cetera) must be subjected to thorough visual inspection when it contains hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

(4) The automatic hazardous waste feed cutoff system and associated alarms must be tested at least once every seven days when hazardous waste is burned to verify operability, unless the applicant demonstrates to the department that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. At a minimum, operational testing must be conducted at least once every thirty days.

(5) These monitoring and inspection data must be recorded and the records must be placed in the operating record required by section 33-24-05-40.

i. Direct transfer to the burner. If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator must comply with section 33-24-05-536.

j. Recordkeeping. The owner or operator must maintain in the operating record of the facility all information and data required by this section for five years.

k. Closure. At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the boiler or industrial furnace.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-528. Interim status standards for burners.

1. **Purpose, scope, applicability.**

a. General.

(1) The purpose of this section is to establish minimum national standards for owners and operators of "existing" boilers and industrial furnaces that burn hazardous waste where such standards define the acceptable management of hazardous waste during the period of interim status. The standards of this section apply to owners and operators of existing facilities until either a permit is issued under subsection 4 of section 33-24-05-527 or until closure responsibilities identified in this section are fulfilled.

(2) Existing or in existence means a boiler or industrial furnace that on or before August 1, 1991, is either in operation burning or processing hazardous waste or for which construction (including the ancillary facilities to burn or to process the hazardous waste) has commenced. A facility has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction; and either:

(a) A continuous onsite, physical construction program has begun; or

(b) The owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for physical construction of the facility to be completed within a reasonable time.

(3) If a boiler or industrial furnace is located at a facility that already has a permit or interim status, then the facility must comply with the applicable regulations dealing with permit modifications in section 33-24-06-14 or changes in interim status in subsection 5 of section 33-24-06-16.

b. Exemptions. The requirements of this section do not apply to hazardous waste and facilities exempt under subsection 2 of section 33-24-05-525, or section 33-24-05-533.

c. Prohibition on burning dioxin-listed wastes. The following hazardous waste listed for dioxin and hazardous waste derived from any of these wastes may not be burned in a boiler or industrial furnace operating under interim status: F020, F021, F022, F023, F026, and F027.

d. Applicability of interim status standards. Owners and operators of boilers and industrial furnaces that burn hazardous waste and are operating under interim status are subject to the following provisions:

(1) Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to section 23-20.3-08 of the North Dakota Century Code or 7003 of the Resource Conservation and Recovery Act;

(2) General facility standards, sections 33-24-05-02 through 33-24-05-08;

(3) Preparedness and prevention, sections 33-24-05-15 through 33-24-05-20;

(4) Contingency plan and emergency procedures, sections 33-24-05-26 through 33-24-05-31;

(5) Manifest system, recordkeeping and reporting, sections 33-24-05-38 through 33-24-05-44, except that sections 33-24-05-38, 33-24-05-39, and 33-24-05-43 do not apply to owners and operators of onsite facilities that do not receive any hazardous waste from offsite sources;

(6) Closure and postclosure, sections 33-24-05-60 through 33-24-05-64;

(7) Financial requirements, sections 33-24-05-75 through 33-24-05-77 and sections 33-24-05-79 through 33-24-05-81, except that states and the federal government are exempt from the financial requirements; and

(8) Air emission standards for equipment leaks, sections 33-24-05-420 through 33-24-05-449, except subsection 1 of section 33-24-05-420.

e. Special requirements for furnaces. The following controls apply during interim status to industrial furnaces (for example, kilns, cupolas) that feed hazardous waste for a purpose other than solely as an ingredient (see paragraph 2) at any location other than the hot end where products are normally discharged or where fuels are normally fired:

(1) Controls.

(a) The hazardous waste shall be fed at a location where combustion gas temperatures are at least one thousand eight hundred degrees Fahrenheit [982.2 degrees Celsius];

(b) The owner or operator must determine that adequate oxygen is present in combustion gases to combust organic constituents in the waste and retain documentation of such determination in the facility record;

(c) For cement kiln systems, the hazardous waste shall be fed into the kiln; and

(d) The hydrocarbon controls of subsection 3 of section 33-24-05-529 or subdivision e of subsection 3 apply upon certification of compliance under subsection 3 irrespective of the carbon monoxide level achieved during the compliance test.

(2) Burning hazardous waste solely as an ingredient. A hazardous waste is burned for a purpose other than solely as an ingredient if it meets either of these criteria:

(a) The hazardous waste has a total concentration of nonmetal compounds listed in appendix V of chapter 33-24-02 exceeding five hundred parts per million by weight, as-fired, and so is considered to be burned for destruction. The concentration of nonmetal compounds in a waste as-generated may be reduced to the five hundred parts per million limit by bona fide treatment that removes or destroys nonmetal constituents. Blending for dilution to meet the five hundred parts per million limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the facility record; or

(b) The hazardous waste has a heating value of five thousand British thermal units per pound or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the five

thousand British thermal units per pound limit by bona fide treatment that removes or destroys organic constituents. Blending to augment the heating value to meet the five thousand British thermal units per pound limit is prohibited and documentation that the waste has not been impermissibly blended must be retained in the facility record.

f. Restrictions on burning hazardous waste that is not a fuel. Prior to certification of compliance under subsection 3, owners and operators shall not feed hazardous waste that has a heating value less than five thousand British thermal units per pound as-generated (except that the heating value of a waste as-generated may be increased to above the five thousand British thermal units per pound limit by bona fide treatment; however, blending to augment the heating value to meet the five thousand British thermal units per pound limit is prohibited and records must be kept to document that impermissible blending has not occurred) in a boiler or industrial furnace, except that:

(1) Hazardous waste may be burned solely as an ingredient;

(2) Hazardous waste may be burned for purposes of compliance testing (or testing prior to compliance testing) for a total period of time not to exceed seven hundred twenty hours;

(3) Such waste may be burned if the department has documentation to show that, prior to August 21, 1991:

(a) The boiler or industrial furnace is operating under the interim status standards for incinerators or thermal treatment units provided by subsection 5 of section 33-24-06-16;

(b) The boiler or industrial furnace met the interim status eligibility requirements under subsection 5 of section 33-24-06-16; and

(c) Hazardous waste with a heating value less than five thousand British thermal units per pound was burned prior to that date; or

(4) Such waste may be burned in a halogen acid furnace if the waste was burned as an excluded ingredient under subsection 5 of section 33-24-02-02 prior to February 21, 1991, and documentation is kept on file supporting this claim.

g. Direct transfer to the burner. If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator must comply with section 33-24-05-536.

2. **Certification of precompliance.**

a. General. The owner or operator must provide complete and accurate information specified in subdivision b to the department on or before August 21, 1991, and must establish limits for the operating parameters specified in subdivision c. Such information is termed a "certification of precompliance" and constitutes a certification that the owner or operator has determined that, when the facility is operated within the limits specified in subdivision c, the owner or operator believes that, using best engineering judgment, emissions of particulate matter, metals, and hydrogen chloride and chlorine are not likely to exceed the limits provided by sections 33-24-05-530, 33-24-05-531, and 33-24-05-532. The facility may burn hazardous waste only under the operating conditions that the owner or operator establishes under subdivision c until the owner or operator submits a revised certification of precompliance under subdivision h or a certification of compliance under subsection 3, or until a permit is issued.

b. Information required. The following information must be submitted with the certification of precompliance to support the determination that the limits established for the operating parameters identified in subdivision c are not likely to result in an exceedance of the allowable emission rates for particulate matter, metals, and hydrogen chloride and chlorine:

(1) General facility information:

(a) Identification number;

(b) Facility name, contact person, telephone number, and address;

(c) Description of boilers and industrial furnaces burning hazardous waste, including type and capacity of device;

(d) A scaled plot plan showing the entire facility and location of the boilers and industrial furnaces burning hazardous waste; and

(e) A description of the air pollution control system on each device burning hazardous waste, including the temperature of the flue gas at the inlet to the particulate matter control system.

(2) Except for facilities complying with the tier I or adjusted tier I feed rate screening limits for metals or total chlorine and chloride provided by subsection 2 or 5 of section 33-24-05-531 and subdivision a of subsection 2 or subsection 5 of section 33-24-05-532 respectively, the estimated uncontrolled (at the inlet to the air pollution control system) emissions of particulate matter, each metal controlled by section 33-24-05-531, and hydrogen chloride and chlorine, and the following information to support such determinations:

(a) The feed rate (pound per hour) of ash, chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feedstream (hazardous waste, other fuels, industrial furnace feedstocks).

(b) The estimated partitioning factor to the combustion gas for the materials identified in subparagraph a and the basis for the estimate and an estimate of the partitioning to hydrogen chloride and chlorine of total chloride and chlorine in feed materials. To estimate the partitioning factor, the owner or operator must use either best engineering judgment or the procedures specified in appendix XXIV of chapter 33-24-05.

(c) For industrial furnaces that recycle collected particulate matter back into the furnace and that will certify compliance with the metals emissions standards under subparagraph a of paragraph 2 of subdivision c of subsection 3, the estimated enrichment factor for each metal. To estimate the enrichment factor, the owner or operator must use either best engineering judgment or the procedures specified in "Alternative Methodology for Implementing Metals Controls" in appendix XXIV of chapter 33-24-05.

(d) If best engineering judgment is used to estimate partitioning factors or enrichment factors under subparagraph b or c respectively, the basis for the judgment. When best engineering judgment is used to develop or evaluate data or information and make determinations under this section, the determinations must be made by a qualified, registered professional engineer and a certification of his or her determinations in accordance with subsection 4 of section 33-24-06-03 must be provided in the certification of precompliance.

(3) For facilities complying with the tier I or adjusted tier I feed rate screening limits for metals or total chlorine and chloride provided by subsection 2 or 5 of section 33-24-05-531 and subdivision a of subsection 2 or subsection 5 of section 33-24-05-532, the feed rate (pound per hour) of total chloride and chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feedstream (hazardous waste, other fuels, industrial furnace feedstocks).

(4) For facilities complying with the tier II or tier III emission limits for metals or hydrogen chloride and chlorine (under subsection 3 or 4 of section 33-24-05-531 or subdivision b of subsection 2 or subsection 3 of section 33-24-05-532), the estimated controlled (outlet of the air pollution control system) emissions rates of particulate matter, each metal controlled by section 33-24-05-531, and hydrogen chloride and chlorine, and the following information to support such determinations:

(a) The estimated air pollution control system removal efficiency for particulate matter, hydrogen chloride and chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium.

(b) To estimate air pollution control system removal efficiency, the owner or operator must use either best engineering judgment or the procedures prescribed in appendix XXIV of chapter 33-24-05.

(c) If best engineering judgment is used to estimate air pollution control system removal efficiency, the basis for the judgment. Use of best engineering judgment must be in conformance with provisions of subparagraph d of paragraph 2.

(5) Determination of allowable emissions rates for hydrogen chloride, chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, and the following information to support such determinations:

(a) For all facilities:

[1] Physical stack height;

[2] Good engineering practice stack height as defined by 40 CFR 51.100(ii);

[3] Maximum flue gas flow rate;

[4] Maximum flue gas temperature;

[5] Attach a United States geological service topographic map (or equivalent) showing the facility location and surrounding land within five kilometers of the facility;

[6] Identify terrain type: complex or noncomplex; and

[7] Identify land use: urban or rural.

(b) For owners and operators using tier III site-specific dispersion modeling to determine allowable levels under subsection 4 of section 33-24-05-531 or subsection 3 of section 33-24-05-532, or adjusted tier I feed rate screening limits under subsection 5 of section 33-24-05-531 or subsection 5 of section 33-24-05-532:

[1] Dispersion model and version used;

[2] Source of meteorological data;

[3] The dilution factor in micrograms per cubic meter per gram per second of emissions for the maximum annual average offsite (unless onsite is required) ground level concentration (maximum exposed individual location); and

[4] Indicate the maximum exposed individual location on the map required under item 5 of subparagraph a;

(6) For facilities complying with the tier II or tier III emissions rate controls for metals or hydrogen chloride and chlorine, a comparison of the estimated controlled emissions rates determined under paragraph 4 with the allowable emission rates determined under paragraph 5;

(7) For facilities complying with the tier I (or adjusted tier I) feed rate screening limits for metals or total chloride and chlorine, a comparison of actual feed rates of each metal and total chlorine and chloride determined under paragraph 3 to the tier I allowable feed rates;

(8) For industrial furnaces that feed hazardous waste for any purpose other than solely as an ingredient (as defined by paragraph 2 of subdivision e of subsection 1) at any location other than the product discharge end of the device, documentation of compliance with the requirements of subparagraph a, b, or c of paragraph 1 of subdivision e of subsection 1; and

(9) For industrial furnaces that recycle collected particulate matter back into the furnace and that will certify compliance with the metals emissions standards under subparagraph a of paragraph 2 of subdivision c of subsection 3:

(a) The applicable particulate matter standard in pound per hour; and

(b) The precompliance limit on the concentration of each metal in collected particulate matter.

c. Limits on operating conditions. The owner and operator shall establish limits on the following parameters consistent with the determinations made under paragraph 2 of subdivision b and certify (under provisions of subdivision i) to the department that the facility will operate within the limits during interim status when there is hazardous waste in the unit until revised certification of precompliance under subdivision h or certification of compliance under subsection 3:

(1) Feed rate of total hazardous waste and (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531) pumpable hazardous waste;

(2) Feed rate of each metal in the following feedstreams:

(a) Total feedstreams, except that industrial furnaces that comply with the alternative metals implementation approach under subdivision d must specify limits on the concentration of each metal in collected particulate matter in lieu of feed rate limits for total feedstreams;

(b) Total hazardous waste feed, unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531; and

(c) Total pumpable hazardous waste feed, unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531;

(3) Total feed rate of chlorine and chloride in total feedstreams;

(4) Total feed rate of ash in total feedstreams, except that the ash feed rate for cement kilns and lightweight aggregate kilns is not limited; and

(5) Maximum production rate of the device in appropriate units when producing normal product, unless complying with the tier I or adjusted tier I feed rate screening limits for chlorine under subdivision a of subsection 2 or subsection 5 of section 33-24-05-532 and for all metals under subsection 2 or 5 of section 33-24-05-531, and the uncontrolled particulate emissions do not exceed the standard under section 33-24-05-530.

d. Operating requirements for furnaces that recycle particulate matter. Owners and operators of furnaces that recycle collected particulate matter back into the furnace and that will certify compliance with the metals emissions controls under subparagraph a of paragraph 2 of subdivision c of subsection 3 must comply with the special operating requirements provided in "Alternative Methodology for Implementing Metals Controls" in appendix XXIV of chapter 33-24-05.

e. Measurement of feed rates and production rate.

(1) General requirements. Limits on each of the parameters specified in subdivision c (except for limits on metals concentrations in collected particulate matter for industrial furnaces that recycle collected particulate matter) must be established and continuously monitored under either of the following methods:

(a) Instantaneous limits. A limit for a parameter may be established and continuously monitored and recorded on an instantaneous basis (for example, the value that occurs at any time) not to be exceeded at any time; or

(b) Hourly rolling average limits. A limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

[1] A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

[2] An hourly rolling average is the arithmetic mean of the sixty most recent one-minute average values recorded by the continuous monitoring system.

(2) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals (arsenic, beryllium, cadmium, and chromium) and lead may be established either on an hourly rolling average basis as prescribed by subparagraph b of paragraph 1 or on (up to) a twenty-four hour rolling average basis. If the owner or operator elects to use an averaging period from two to twenty-four hours:

(a) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis; and

(b) The continuous monitor shall meet the following specifications:

[1] A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

[2] The rolling average for the selected averaging period is defined as the arithmetic mean of one-hour block averages for the averaging period. A one-hour block average is the arithmetic mean of the one-minute averages recorded during the sixty-minute period beginning at one minute after the beginning of preceding clock hour.

(3) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (for example, metals, chloride, chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of paragraphs 1 and 2.

f. Public notice requirements at precompliance. On or before August 21, 1991, the owner or operator must submit a notice with the following information for publication in a major local newspaper of general circulation and send a copy of the notice to the appropriate units of state and local government. The owner or operator must provide to the department with the certification of precompliance evidence of submitting the notice for publication. The notice, which shall be entitled "Notice of Certification of Precompliance with Hazardous Waste Burning Requirements of subsection 2 of section 33-24-05-528", must include:

(1) Name and address of the owner and operator of the facility as well as the location of the device burning hazardous waste;

(2) Date that the certification of precompliance is submitted to the department;

(3) Brief description of the regulatory process required to comply with the interim status requirements including required emissions testing to demonstrate conformance with emissions standards for organic compounds, particulate matter, metals, and hydrogen chloride and chlorine;

(4) Types and quantities of hazardous waste burned including source, whether solids or liquids, as well as an appropriate description of the waste;

(5) Type of device or devices in which the hazardous waste is burned including a physical description and maximum production rate of each device;

(6) Types and quantities of other fuels and industrial furnace feedstocks fed to each unit;

(7) Brief description of the basis for this certification of precompliance as specified in subdivision b;

(8) Locations where the record for the facility can be viewed and copied by interested parties. These records and locations shall at a minimum include:

(a) The administrative record kept by the department where the supporting documentation was submitted or another location designated by the department; and

(b) The boiler and industrial furnace correspondence file kept at the facility site where the device is located. The correspondence file must include all correspondence between the facility and the department and local regulatory officials, including copies of all certifications and notifications, such as the precompliance certification, precompliance public notice, notice of compliance testing, compliance test report, compliance certification, time extension requests and approvals or denials, enforcement notifications of violations, and copies of state site visit reports submitted to the owner or operator;

(9) Notification of the establishment of a facility mailing list whereby interested parties shall notify the department that they wish to be placed on the mailing list to receive future information and notices about this facility; and

(10) Location (mailing address) of the department, where further information can be obtained on regulation of hazardous waste burning.

g. Monitoring other operating parameters. When the monitoring systems for the operating parameters listed in paragraphs 5 through 13 of subdivision a of subsection 3 are installed and operating in conformance with vendor specifications or (for carbon monoxide, hydrocarbon, and oxygen) specifications provided by appendix XXIV of chapter 33-24-05, as appropriate, the parameters shall be continuously monitored and records shall be maintained in the operating record.

h. Revised certification of precompliance. The owner or operator may revise at any time the information and operating conditions documented under subdivisions b and c in the certification of precompliance by submitting a revised certification of precompliance under procedures provided by those subdivisions.

(1) The public notice requirements of subdivision f do not apply to recertifications.

(2) The owner and operator must operate the facility within the limits established for the operating parameters under subdivision c until a revised certification is submitted under this subdivision or a certification of compliance is submitted under subsection 3.

i. Certification of precompliance statement. The owner or operator must include the following signed statement with the certification of precompliance submitted to the department:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of subsection 2 are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also acknowledge that the operating limits established in this certification pursuant to paragraphs c and d of subsection 2 are enforceable limits at which the facility can legally operate during interim status until: (1) A revised certification of precompliance is submitted, (2) a certification of compliance is submitted, or (3) an operating permit is issued."

3. **Certification of compliance.** The owner or operator shall conduct emissions testing to document compliance with the emissions standards of subsections 2 through 5 of section 33-24-05-529, sections 33-24-05-530, 33-24-05-531, and 33-24-05-532, and subparagraph d of paragraph 1 of subdivision e of subsection 1, under the procedures prescribed by this subsection, except under extensions of time provided by subdivision g. Based on the compliance test, the owner or operator shall submit to the department, on or before August 21, 1992, a complete and accurate "certification of compliance" (under subdivision d) with those emission standards establishing limits on the operating parameters specified in subdivision a.

   a. Limits on operating conditions. The owner or operator shall establish limits on the following parameters based on operations during the compliance test (under procedures prescribed in paragraph 4 of subdivision d) and include these limits with the certification of compliance. The boiler or industrial furnace must be operated in accordance with these operating limits and all applicable emissions standards of subsections 2 through 5 of section 33-24-05-529, sections 33-24-05-530 through 33-24-05-532, and subparagraph d of paragraph 1 of subdivision e of subsection 1 at all times when there is hazardous waste in the unit until an operating permit is issued.

      (1) Feed rate of total hazardous waste and (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531), pumpable hazardous waste;

      (2) Feed rate of each metal in the following feedstreams:

         (a) Total feedstreams, except that:

            [1] Facilities that comply with tier I or adjusted tier I metals feed rate screening limits may set their operating limits at the metals feed rate screening limits determined under subsection 2 or 5 of section 33-24-05-531; and

            [2] Industrial furnaces that must comply with the alternative metals implementation approach under paragraph 2 of subdivision c must specify limits on the concentration of each metal in collected particulate matter in lieu of feed rate limits for total feedstreams;

         (b) Total hazardous waste feed (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531); and

         (c) Total pumpable hazardous waste feed (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531);

      (3) Total feed rate of chlorine and chloride in total feedstreams, except that facilities that comply with tier I or adjusted tier I feed rate screening limits may set their operating limits at the total chlorine and chloride feed rate screening limits determined under subdivision a of subsection 1 or subsection 5 of section 33-24-05-532;

      (4) Total feed rate of ash in total feedstreams, except that the ash feed rate for cement kilns and lightweight aggregate kilns is not limited;

      (5) Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas. When complying with the carbon monoxide controls of subsection 2 of section 33-24-05-529, the carbon monoxide limit is one hundred parts per million by volume, and when complying with the hydrocarbon controls of subsection 3 of section 33-24-05-529, the hydrocarbon limit is twenty parts per million by volume.

When complying with the carbon monoxide controls of subsection 3 of section 33-24-05-529, the carbon monoxide limit is established based on the compliance test;

(6) Maximum production rate of the device in appropriate units when producing normal product, except that facilities that comply with tier I or adjusted tier I feed rate screening limits may set their operating limits at the total chlorine and chloride feed rate screening limits determined under subdivision a of subsection 1 or subsection 5 of section 33-24-05-532 and for all metals under subsection 2 or 5 of section 33-24-05-531, and the uncontrolled particulate emissions do not exceed the standard under section 33-24-05-530;

(7) Maximum combustion chamber temperature where the temperature measurement is as close to the combustion zone as possible and is upstream of any quench water injection (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531);

(8) Maximum flue gas temperature entering a particulate matter control device (unless complying with tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531 and the total chlorine and chloride feed rate screening limits under subsection 2 or 5 of section 33-24-05-532);

(9) For systems using wet scrubbers, including wet ionizing scrubbers (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531 and the total chlorine and chloride feed rate screening limits under subdivision a of subsection 2 or subsection 5 of section 33-24-05-531):

(a) Minimum liquid to flue gas ratio;

(b) Minimum scrubber blowdown from the system or maximum suspended solids content of scrubber water; and

(c) Minimum pH level of the scrubber water;

(10) For systems using venturi scrubbers, the minimum differential gas pressure across the venturi (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531 and the total chlorine and chloride feed rate screening limits under subdivision a of subsection 2 or subsection 5 of section 33-24-05-532);

(11) For systems using dry scrubbers (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531 and the total chlorine and chloride feed rate screening limits under subdivision a of subsection 2 or subsection 5 of section 33-24-05-532):

(a) Minimum caustic feed rate; and

(b) Maximum flue gas flow rate;

(12) For systems using wet ionizing scrubbers or electrostatic precipitators (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531 and the total chlorine and chloride feed rate screening limits under subdivision a of subsection 2 or subsection 5 of section 33-24-05-532):

(a) Minimum electrical power in kilovolt amperes (kVA) to the precipitator plates; and

(b) Maximum flue gas flow rate;

(13) For systems using fabric filters (baghouses), the minimum pressure drop (unless complying with the tier I or adjusted tier I metals feed rate screening limits under subsection 2 or 5 of section 33-24-05-531 and the total chlorine and chloride feed rate screening limits under subdivision a of subsection 2 of subsection 5 of section 33-24-05-532).

b. Prior notice of compliance testing. At least thirty days prior to the compliance testing required by subdivision c, the owner or operator shall notify the department and submit the following information:

(1) General facility information including:

(a) Identification number;

(b) Facility name, contact person, telephone number, and address;

(c) Person responsible for conducting compliance test, including company name, address, and telephone number, and a statement of qualifications; and

(d) Planned date of the compliance test;

(2) Specific information on each device to be tested including:

(a) Description of boiler or industrial furnace;

(b) A scaled plot plan showing the entire facility and location of the boiler or industrial furnace;

(c) A description of the air pollution control system;

(d) Identification of the continuous emission monitors that are installed, including:

[1] Carbon monoxide monitor;

[2] Oxygen monitor; and

[3] Hydrocarbon monitor, specifying the minimum temperature of the system and, if the temperature is less than one hundred fifty degrees Celsius, an explanation of why a heated system is not used (see subdivision e) and a brief description of the sample gas conditioning system;

(e) Indication of whether the stack is shared with another device that will be in operation during the compliance test; and

(f) Other information useful to an understanding of the system design or operation; and

(3) Information on the testing planned, including a complete copy of the test protocol and quality assurance/quality control plan, and a summary description for each test providing the following information at a minimum:

(a) Purpose of the test (for example, demonstrate compliance with emissions of particulate matter); and

(b) Planned operating conditions, including levels for each pertinent parameter specified in subdivision a.

c. Compliance testing.

(1) General. Compliance testing must be conducted under conditions for which the owner or operator has submitted a certification of precompliance under subsection 2 and under conditions established in the notification of testing required by subdivision b. The owner or operator may seek approval on a case-by-case basis to use compliance test data from one unit in lieu of testing a similar onsite unit. To support the request, the owner or operator must provide a comparison of the hazardous waste burned and other feedstreams, and the design, operation, and maintenance of both the tested unit and the similar unit. The department shall provide a written approval to use compliance test data in lieu of testing a similar unit if the department finds that the hazardous wastes, the devices, and the operating conditions are sufficiently similar, and the data from the other compliance test is adequate to meet the requirements of subsection 3.

(2) Special requirements for industrial furnaces that recycle collected particulate matter. Owners and operators of industrial furnaces that recycle back into the furnace particulate matter from the air pollution control system must comply with one of the following procedures for testing to determine compliance with the metals standards of subsection 3 or 4 of section 33-24-05-531:

(a) The special testing requirements prescribed in "Alternative Method for Implementing Metals Controls" in appendix XXIV of chapter 33-24-05; or

(b) Stack emissions testing for a minimum of six hours each day while hazardous waste is burned during interim status. The testing must be conducted when burning normal hazardous waste for that day at normal feed rates for that day and when the air pollution control system is operated under normal conditions. During interim status, hazardous waste analysis for metals content must be sufficient for the owner or operator to determine if changes in metals content may affect the ability of the facility to meet the metals emissions standards established under subsection 3 or 4 of section 33-24-05-531. Under this option, operating limits (under subdivision a) must be established during compliance testing under subdivision c only on the following parameters:

[1] Feed rate of total hazardous waste;

[2] Total feed rate of chlorine and chloride in total feedstreams;

[3] Total feed rate of ash in total feedstreams, except that the ash feed rate for cement kilns and lightweight aggregate kilns is not limited;

[4] Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas; and

[5] Maximum production rate of the device in appropriate units when producing normal product; or

(c) Conduct compliance testing to determine compliance with the metals standards to establish limits on the operating parameters of subdivision a only after the kiln system has been conditioned to enable it to reach equilibrium with respect to metals fed into the system and metals emissions. During conditioning, hazardous waste and raw materials having the same metals

content as will be fed during the compliance test must be fed at the feed rates that will be fed during the compliance test.

(3) Conduct of compliance testing.

(a) If compliance with all applicable emissions standards of sections 33-24-05-529 through 33-24-05-532 is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards must be as close as possible to the original operating conditions.

(b) Prior to obtaining test data for purposes of demonstrating compliance with the applicable emissions standards of sections 33-24-05-529 through 33-24-05-532 or establishing limits on operating parameters under this section, the facility must operate under compliance test conditions for a sufficient period to reach steady-state operations. Industrial furnaces that recycle collected particulate matter back into the furnace and that comply with subparagraph a or b of paragraph 2, however, need not reach steady-state conditions with respect to the flow of metals in the system prior to beginning compliance testing for metals.

(c) Compliance test data on the level of an operating parameter for which a limit must be established in the certification of compliance must be obtained during emissions sampling for the pollutant or pollutants (for example, metals, particulate matter, hydrogen chloride and chlorine, organic compounds) for which the parameter must be established as specified by subdivision a.

d. Certification of compliance. Within ninety days of completing compliance testing, the owner or operator must certify to the department compliance with the emissions standards of subsections 2, 3, and 5 of section 33-24-05-529, sections 33-24-05-530, 33-24-05-531, and 33-24-05-532, and subparagraph d of paragraph 1 of subdivision e of subsection 1. The certification of compliance must include the following information:

(1) General facility and testing information including:

(a) Identification number;

(b) Facility name, contact person, telephone number, and address;

(c) Person responsible for conducting compliance testing, including company name, address, and telephone number, and a statement of qualifications;

(d) Date or dates of each compliance test;

(e) Description of boiler or industrial furnace tested;

(f) Person responsible for quality assurance/quality control, title, and telephone number, and statement that procedures prescribed in the quality assurance/quality control plan submitted under paragraph 3 of subdivision b have been followed, or a description of any changes and an explanation of why changes were necessary;

(g) Description of any changes in the unit configuration prior to or during testing that would alter any of the information submitted in the prior notice of compliance testing under subdivision b, and an explanation of why the changes were necessary;

(h) Description of any changes in the planned test conditions prior to or during the testing that alter any of the information submitted in the prior notice of compliance testing under subdivision b, and an explanation of why the changes were necessary; and

(i) The complete report on results of emissions testing.

(2) Specific information on each test including:

(a) Purpose or purposes of test (for example, demonstrate conformance with the emissions limits for particulate matter, metals, hydrogen chloride, chlorine, and carbon monoxide).

(b) Summary of test results for each run and for each test including the following information:

[1] Date of run;

[2] Duration of run;

[3] Time-weighted average and highest hourly rolling average carbon monoxide level for each run and for the test;

[4] Highest hourly rolling average hydrocarbon level, if hydrocarbon monitoring is required for each run and for the test;

[5] If dioxin and furan testing is required under subsection 5 of section 33-24-05-529, time-weighted average emissions for each run and for the test of chlorinated dioxin and furan emissions, and the predicted maximum annual average ground level concentration of the toxicity equivalency factor;

[6] Time-weighted average particulate matter emissions for each run and for the test;

[7] Time-weighted average hydrogen chloride and chlorine emissions for each run and for the test;

[8] Time-weighted average emissions for the metals subject to regulation under section 33-24-05-531 for each run and for the test; and

[9] Quality assurance and quality control results.

(3) Comparison of the actual emissions during each test with the emissions limits prescribed by subsections 2, 3, and 5 of section 33-24-05-529, sections 33-24-05-530, 33-24-05-531, and 33-24-05-532 and established for the facility in the certification of precompliance under subsection 2.

(4) Determination of operating limits based on all valid runs of the compliance test for each applicable parameter listed in subdivision a using either of the following procedures:

(a) Instantaneous limits. A parameter may be measured and recorded on an instantaneous basis (for example, the value that occurs at any time) and the operating limit specified as the time-weighted average during all runs of the compliance test; or

(b) Hourly rolling average basis.

[1] The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

[a] A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

[b] An hourly rolling average is the arithmetic mean of the sixty most recent one-minute average values recorded by the continuous monitoring system.

[2] The operating limit for the parameter shall be established based on compliance test data as the average overall test runs of the highest hourly rolling average value for each run.

(c) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals (for example, arsenic, beryllium, cadmium, and chromium) and lead may be established either on an hourly rolling average basis as prescribed by subparagraph b or on (up to) a twenty-four hour rolling average basis. If the owner or operator elects to use an averaging period from two to twenty-four hours:

[1] The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

[2] The continuous monitor shall meet the following specifications:

[a] A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds; and

[b] The rolling average for the selected averaging period is defined as the arithmetic mean of one-hour block averages for the averaging period. A one-hour block average is the arithmetic mean of the one-minute averages recorded during the sixty-minute period beginning at one minute after the beginning of preceding clock hour; and

[3] The operating limit for the feed rate of each metal shall be established based on compliance test data as the average overall test runs of the highest hourly rolling average feed rate for each run.

(d) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (for example, metals, chloride/chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of subparagraphs a through c.

(5) Certification of compliance statement. The following statement shall accompany the certification of compliance:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified

personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of subsection 3 of section 33-24-05-528 are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also acknowledge that the operating conditions established in this certification pursuant to paragraph 4 of subdivision d of subsection 3 of section 33-24-05-528 are enforceable limits at which the facility can legally operate during interim status until a revised certification of compliance is submitted."

e. Special requirements for hydrocarbon monitoring systems. When an owner or operator is required to comply with the hydrocarbon controls provided by subsection 3 of section 33-24-05-529 or subparagraph d of paragraph 1 of subdivision e of subsection 1, a conditioned gas monitoring system may be used in conformance with specifications provided in appendix XXIV of chapter 33-24-05 provided that the owner or operator submits a certification of compliance without using extensions of time provided by subdivision g.

f. Special operating requirements for industrial furnaces that recycle collected particulate matter. Owners and operators of industrial furnaces that recycle back into the furnace particulate matter from the air pollution control system must:

(1) When complying with the requirements of subparagraph a of paragraph 2 of subdivision c, comply with the operating requirements prescribed in "Alternative Method to Implement the Metals Controls" in appendix XXIV of chapter 33-24-05; and

(2) When complying with the requirements of subparagraph b of paragraph 2 of subdivision c, comply with the operating requirements prescribed by that subparagraph.

g. Extensions of time.

(1) If the owner or operator does not submit a complete certification of compliance for all of the applicable emissions standards of sections 33-24-05-529, 33-24-05-530, 33-24-05-531, and 33-24-05-532 by August 21, 1992, an owner or operator must either:

(a) Stop burning hazardous waste and begin closure activities under subsection 12 for the hazardous waste portion of the facility;

(b) Limit hazardous waste burning only for purposes of compliance testing (and pretesting to prepare for compliance testing) a total period of seven hundred twenty hours for the period of time beginning August 21, 1992, submit a notification to the department by August 21, 1992, stating that the facility is operating under restricted interim status and intends to resume burning hazardous waste, and submit a complete certification of compliance by August 23, 1993; or

(c) Obtain a case-by-case extension of time under paragraph 2.

(2) The owner or operator may request a case-by-case extension of time to extend any time limit provided by this subsection if compliance with the time limit is not practicable for reasons beyond the control of the owner or operator.

(a) In granting an extension, the department may apply conditions as the facts warrant to ensure timely compliance with the requirements of this section and that the facility operates in a manner that does not pose a hazard to human health and the environment;

(b) When an owner or operator requests an extension of time to enable the facility to comply with the alternative hydrocarbon provision of subsection 6 of section 33-24-05-529 and to obtain a hazardous waste operating permit because the facility cannot meet the hydrocarbon limit of subsection 3 of section 33-24-05-529:

[1] The department shall, in considering whether to grant the extension:

[a] Determine whether the owner and operator have submitted in a timely manner a complete part B permit application that includes information required under subdivision ff of subsection 2 of section 33-24-06-17; and

[b] Consider whether the owner or operator have made a good-faith effort to certify compliance with all other emission controls, including the controls on dioxins and furans of subsection 5 of section 33-24-05-529 and the controls on particulate matter, metals, and hydrogen chloride and chlorine.

[2] If an extension is granted, the department shall, as a condition of the extension, require the facility to operate under flue gas concentration limits on carbon monoxide and hydrocarbon that, based on available information, including information in the part B permit application, are baseline carbon monoxide and hydrocarbon levels as defined by subdivision a of subsection 6 of section 33-24-05-529.

h. Revised certification of compliance. The owner or operator may submit at any time a revised certification of compliance (recertification of compliance) under the following procedures:

(1) Prior to submittal of a revised certification of compliance, hazardous waste may not be burned for more than a total of seven hundred twenty hours under operating conditions that exceed those established under a current certification of compliance, and such burning may be conducted only for purposes of determining whether the facility can operate under revised conditions and continue to meet the applicable emissions standards of sections 33-24-05-529 through 33-24-05-532;

(2) At least thirty days prior to first burning hazardous waste under operating conditions that exceed those established under a current certification of compliance, the owner or operator shall notify the department and submit the following information:

(a) Identification number, and facility name, contact person, telephone number, and address;

(b) Operating conditions that the owner or operator is seeking to revise and description of the changes in facility design or operation that prompted the need to seek to revise the operating conditions;

(c) A determination that when operating under the revised operating conditions, the applicable emissions standards of sections 33-24-05-529 through 33-24-05-532 are not likely to be exceeded. To document this determination, the owner or operator shall submit the applicable information required under subdivision b of subsection 2; and

(d) Complete emissions testing protocol for any pretesting and for a new compliance test to determine compliance with the applicable emissions standards of sections 33-24-05-529, 33-24-05-530, 33-24-05-531, and 33-24-05-532 when operating under revised operating conditions. The protocol shall include a schedule of pretesting and compliance testing. If the owner or operator revises the scheduled date for the compliance test, the owner or operator shall notify the department in writing at least thirty days prior to the revised date of the compliance test;

(3) Conduct a compliance test under the revised operating conditions and the protocol submitted to the department to determine compliance with the applicable emissions standards of sections 33-24-05-529, 33-24-05-530, 33-24-05-531, and 33-24-05-532; and

(4) Submit a revised certification of compliance under subdivision d.

4. **Periodic recertifications.** The owner or operator must conduct compliance testing and submit to the department a recertification of compliance under provisions of subsection 3 within five years from submitting the previous certification or recertification. If the owner or operator seeks to recertify compliance under new operating conditions, the owner or operator must comply with the requirements of subdivision h of subsection 3.

5. **Noncompliance with certification schedule.** If the owner or operator does not comply with the interim status compliance schedule provided by subsections 2 through 4, hazardous waste burning must terminate on the date that the deadline is missed, closure activities must begin under subsection 12, and hazardous waste burning may not resume except under an operating permit issued under subsection 4 of section 33-24-06-19. For purposes of compliance with the closure provisions of subsection 12 and subsection 5 of section 33-24-06-16 the boiler or industrial furnace has received "the known final volume of hazardous waste" on the date that the deadline is missed.

6. **Startup and shutdown.** Hazardous waste (except waste fed solely as an ingredient under the tier I (or adjusted tier I) feed rate screening limits for metals and chloride/chlorine) must not be fed into the device during startup and shutdown of the boiler or industrial furnace, unless the device is operating within the conditions of operation specified in the certification of compliance.

7. **Automatic waste feed cutoff.** During the compliance test required by subdivision c of subsection 3, and upon certification of compliance under subsection 3, a boiler or industrial furnace must be operated with a functioning system that automatically cuts off the hazardous waste feed when the applicable operating conditions specified in paragraphs 1 and 5 through 13 of subdivision a of subsection 3 deviate from those established in the certification of compliance. In addition:

   a. To minimize emissions of organic compounds, the minimum combustion chamber temperature (or the indicator of combustion chamber temperature) that occurred during the compliance test must be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber, with the minimum temperature during the compliance test defined as either:

(1) If compliance with the combustion chamber temperature limit is based on an hourly rolling average, the minimum temperature during the compliance test is considered to be the average overall runs of the lowest hourly rolling average for each run; or

(2) If compliance with the combustion chamber temperature limit is based on an instantaneous temperature measurement, the minimum temperature during the compliance test is considered to be the time-weighted average temperature during all runs of the test; and

b. Operating parameters limited by the certification of compliance must continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the limits established in the certification of compliance.

8. **Fugitive emissions.** Fugitive emissions must be controlled by:

a. Keeping the combustion zone totally sealed against fugitive emissions;

b. Maintaining the combustion zone pressure lower than atmospheric pressure; or

c. An alternate means of control that the owner or operator can demonstrate provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure. Support for such demonstration shall be included in the operating record.

9. **Changes**. A boiler or industrial furnace must cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits specified in the certification of compliance.

10. **Monitoring and inspections.**

a. The owner or operator must monitor and record the following, at a minimum, while burning hazardous waste:

(1) Feed rates and composition of hazardous waste, other fuels, and industrial furnace feedstocks, and feed rates of ash, metals, and total chloride and chlorine as necessary to ensure conformance with the certification of precompliance or certification of compliance.

(2) Carbon monoxide, oxygen, and if applicable, hydrocarbons, on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with the operating limits specified in the certification of compliance. Carbon monoxide, hydrocarbon, and oxygen monitors must be installed, operated, and maintained in accordance with methods specified in appendix XXIV of chapter 33-24-05.

(3) Upon the request of the department, sampling and analysis of the hazardous waste (and other fuels and industrial furnace feed stocks as appropriate) and the stack gas emissions must be conducted to verify that the operating conditions established in the certification of precompliance or certification of compliance achieve the applicable standards of sections 33-24-05-529 through 33-24-05-532.

b. The boiler or industrial furnace and associated equipment (pumps, valves, pipes, fuel storage tanks, et cetera) must be subjected to thorough visual inspection when they contain hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

c. The automatic hazardous waste feed cutoff system and associated alarms must be tested at least once every seven days when hazardous waste is burned to verify operability, unless the owner or operator can demonstrate that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. Support for such demonstration shall be included in the operating record. At a minimum, operational testing must be conducted at least once every thirty days.

d. These monitoring and inspection data must be recorded and the records must be placed in the operating log.

11. **Recordkeeping.** The owner or operator must keep in the operating record of the facility all information and data required by this section for five years.

12. **Closure.** At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the boiler or industrial furnace and must comply with the applicable standards of subsection 5 of section 33-24-06-16.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05, 23-20.3-10

33-24-05-529. Standards to control organic emissions.

1. **Destruction and removal efficiency standard.**

a. General. Except as provided in subdivision c, a boiler or industrial furnace burning hazardous waste must achieve a destruction and removal efficiency of 99.99 percent for all organic hazardous constituents in the waste feed. To demonstrate conformance with this requirement, 99.99 percent destruction and removal efficiency must be demonstrated during a trial burn for each principal organic hazardous constituent designated (under subdivision b) in its permit for each waste feed. Destruction and removal efficiency is determined for each principal organic hazardous constituent from the following equation:

$$\text{destruction and removal efficiency} = \left(1 - \frac{W(out)}{W(in)}\right) \times 100$$

where:

W_{in} = Mass feed rate of one principal organic hazardous constituent in the hazardous waste fired to the boiler or industrial furnace; and

W_{out} = Mass emission rate of the same principal organic hazardous constituent present in stack gas prior to release to the atmosphere.

b. Designation of principal organic hazardous constituents. Principal organic hazardous constituents are those compounds for which compliance with the destruction and removal efficiency requirements shall be demonstrated in a trial burn in conformance with procedures prescribed in subsection 4 of section 33-24-06-19. One or more principal organic hazardous constituents shall be designated by the department for each waste feed to be burned. Principal organic hazardous constituents shall be designated based on the degree of difficulty of destruction of the organic constituents in the waste and on

their concentrations or mass in the waste feed considering the results of waste analyses submitted with part B of the permit application. Principal organic hazardous constituents are most likely to be selected from among those compounds listed in appendix V of chapter 33-24-02 that are also present in the normal waste feed. However, if the applicant demonstrates to the department's satisfaction that a compound not listed in appendix V of chapter 33-24-02 or not present in the normal waste feed is a suitable indicator of compliance with the destruction and removal efficiency requirements, that compound may be designated as a principal organic hazardous constituent. Such principal organic hazardous constituents need not be toxic or organic compounds.

c. Dioxin-listed waste. A boiler or industrial furnace burning hazardous waste containing (or derived from) hazardous waste numbers F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency of 99.9999 percent for each principal organic hazardous constituent designated (under subdivision b) in its permit. This performance must be demonstrated on principal organic hazardous constituents that are more difficult to burn than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. Destruction and removal efficiency is determined for each principal organic hazardous constituent from the equation in subdivision a. In addition, the owner or operator of the boiler or industrial furnace must notify the department of intent to burn hazardous waste numbers F020, F021, F022, F023, F026, or F027.

d. Automatic waiver of destruction and removal efficiency trial burn. Owners and operators of boilers operated under the special operating requirements provided by section 33-24-05-535 are considered to be in compliance with the destruction and removal efficiency standard of subdivision a and are exempt from the destruction and removal efficiency trial burn.

e. Low risk waste. Owners and operators of boilers or industrial furnaces that burn hazardous waste in compliance with the requirements of subsection 1 of section 33-24-05-534 are considered to be in compliance with the destruction and removal efficiency standard of subdivision a and are exempt from the destruction and removal efficiency trial burn.

2. **Carbon monoxide standard.**

a. Except as provided in subsection 3, the stack gas concentration of carbon monoxide from a boiler or industrial furnace burning hazardous waste cannot exceed one hundred parts per million by volume on an hourly rolling average basis (for example, over any sixty-minute period), continuously corrected to seven percent oxygen, dry gas basis.

b. Carbon monoxide and oxygen shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix XXIV of chapter 33-24-05.

c. Compliance with the one hundred parts per million by volume carbon monoxide limit must be demonstrated during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). To demonstrate compliance, the highest hourly rolling average carbon monoxide level during any valid run of the trial burn or compliance test must not exceed one hundred parts per million by volume.

3. **Alternative carbon monoxide standard.**

a. The stack gas concentration of carbon monoxide from a boiler or industrial furnace burning hazardous waste may exceed the one hundred parts per million by volume limit

provided that stack gas concentrations of hydrocarbons do not exceed twenty parts per million by volume, except as provided by subsection 6 for certain industrial furnaces.

b. Hydrocarbon limits must be established under this section on an hourly rolling average basis (for example, over any sixty-minute period), reported as propane, and continuously corrected to seven percent oxygen, dry gas basis.

c. Hydrocarbon shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Hydrocarbons for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix XXIV of chapter 33-24-05. Carbon monoxide and oxygen shall be continuously monitored in conformance with subdivision b of subsection 2.

d. The alternative carbon monoxide standard is established based on carbon monoxide data during the trial burn (for a new facility) and the compliance test (for an interim status facility). The alternative carbon monoxide standard is the average overall valid runs of the highest hourly average carbon monoxide level for each run. The carbon monoxide limit is implemented on an hourly rolling average basis, and continuously corrected to seven percent oxygen, dry gas basis.

4. **Special requirements for furnaces.** Owners and operators of industrial furnaces (for example, kilns, cupolas) that feed hazardous waste for a purpose other than solely as an ingredient (see paragraph 2 of subdivision e of subsection 1 of section 33-24-05-528) at any location other than the end where products are normally discharged and where fuels are normally fired must comply with the hydrocarbon limits provided by subsection 3 or 6 irrespective of whether stack gas carbon monoxide concentrations meet the one hundred parts per million by volume limit of subsection 2.

5. **Controls for dioxins and furans**. Owners and operators of boilers and industrial furnaces that are equipped with a dry particulate matter control device that operates within the temperature range of four hundred fifty degrees to seven hundred fifty degrees Fahrenheit [232.2 to 398.9 degrees Celsius], and industrial furnaces operating under an alternative hydrocarbon limit established under subsection 6 must conduct a site-specific risk assessment as follows to demonstrate that emissions of chlorinated dibenzo-p-dioxins and dibenzofurans do not result in an increased lifetime cancer risk to the hypothetical maximum exposed individual exceeding one in one hundred thousand:

a. During the trial burn (for new facilities or an interim status facility applying for a permit) or compliance test (for interim status facilities), determine emission rates of the tetra-octa congeners of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs/CDFs) using method 0023A, "Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources", environmental protection agency publication SW-846, incorporated by reference in section 33-24-01-05;

b. Estimate the 2,3,7,8-TCDD toxicity equivalence of the tetra-octa chlorinated dibenzo-p-dioxins and dibenzofurans congeners using "Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran Congeners" in appendix XXIV of chapter 33-24-05. Multiply the emission rates of chlorinated dibenzo-p-dioxins and dibenzofurans congeners with a toxicity equivalence greater than zero (see the procedure) by the calculated toxicity equivalence factor to estimate the equivalent emission rate of 2,3,7,8-TCDD;

c. Conduct dispersion modeling using methods recommended in appendix W of 40 CFR part 51 ("Guidelines on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in appendix XXIV, or in "Screening Procedures for Estimating Air Quality Impact of

Stationary Sources", revised as incorporated by reference in section 33-24-01-05 to predict the maximum annual average offsite ground level concentration of 2,3,7,8-TCDD equivalents determined under subdivision b. The maximum annual average concentration must be used when a person resides onsite; and

d. The ratio of the predicted maximum annual average ground level concentration of 2,3,7,8-TCDD equivalents to the risk-specific dose for 2,3,7,8-TCDD provided in appendix XX of chapter 33-24-05 (2.2×10^{-7}) shall not exceed 1.0.

6. **Monitoring carbon monoxide and hydrocarbon in the bypass duct of a cement kiln**. Cement kilns may comply with the carbon monoxide and hydrocarbon limits provided by subsections 2 through 4 by monitoring in the bypass duct provided that:

   a. Hazardous waste is fired only into the kiln and not at any location downstream from the kiln exit relative to the direction of gas flow; and

   b. The bypass duct diverts a minimum of ten percent of kiln off-gas into the duct.

7. **Use of emissions test data to demonstrate compliance and establish operating limits**. Compliance with the requirements of this section must be demonstrated simultaneously by emissions testing or during separate runs under identical operating conditions. Further, data to demonstrate compliance with the carbon monoxide and hydrocarbon limits of this section or to establish alternative carbon monoxide or hydrocarbon limits under this section must be obtained during the time that destruction and removal efficiency testing, and where applicable, CCD/CDF testing under subsection 5 and comprehensive organic emissions testing under subsection 6 is conducted.

8. **Enforcement**. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 33-24-05-527) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and reissuance of a permit under section 33-24-06-12.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05, 23-20.3-10

33-24-05-530. Standards to control particulate matter.

1. A boiler or industrial furnace burning hazardous waste may not emit particulate matter in excess of one hundred eighty milligrams per dry standard cubic meter [0.08 grains per dry standard cubic foot] after correction to a stack gas concentration of seven percent oxygen, using procedures prescribed in 40 CFR part 60, appendix A, methods 1 through 5, and appendix XXIV of chapter 33-24-05.

2. An owner or operator meeting the requirements of subsection 2 of section 33-24-05-534 for the low risk waste exemption is exempt from the particulate matter standard.

3. Oxygen correction.

   a. Measured pollutant levels must be corrected for the amount of oxygen in the stack gas according to the formula:

      $Pc = Pm \times 14/(E-Y)$

      where:

Pc is the corrected concentration of the pollutant in the stack gas;

Pm is the measured concentration of the pollutant in the stack gas;

E is the oxygen concentration on a dry basis in the combustion air fed to the device; and

Y is the measured oxygen concentration on a dry basis in the stack.

b. For devices that feed normal combustion air, E will equal twenty-one percent. For devices that feed oxygen-enriched air for combustion (that is, air with an oxygen concentration exceeding twenty-one percent), the value of E will be the concentration of oxygen in the enriched air.

c. Compliance with all emission standards provided by sections 33-24-05-525 through 33-24-05-549 must be based on correcting to seven percent oxygen using this procedure.

4. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 33-24-05-527) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and reissuance of a permit under section 33-24-06-12.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 33-20.3-05, 23-20.3-09

33-24-05-531. Standards to control metals emission.

1. **General**. The owner or operator must comply with the metals standards provided by subsections 2, 3, 4, 5, or 6 for each metal listed in subsection 2 that is present in the hazardous waste at detectable levels by using appropriate analytical procedures.

2. **Tier I feed rate screening limits**. Feed rate screening limits for metals are specified in appendix XVI as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided in subdivision g.

   a. Noncarcinogenic metals. The feed rates of antimony, barium, lead, mercury, thallium, and silver in all feedstreams, including hazardous waste, fuels, and industrial furnace feedstocks shall not exceed the screening limits specified in appendix XVI of chapter 33-24-05.

      (1) The feed rate screening limits for antimony, barium, mercury, thallium, and silver are based on either:

         (a) An hourly rolling average as defined in subparagraph b of paragraph 1 of subdivision f of subsection 5 of section 33-24-05-527; or

         (b) An instantaneous limit not to be exceeded at any time.

      (2) The feed rate screening limit for lead is based on one of the following:

         (a) An hourly rolling average as defined in subparagraph b of paragraph 1 of subdivision f of subsection 5 of section 33-24-05-527;

         (b) An averaging period of two to twenty-four hours as defined in paragraph 2 of subdivision f of subsection 5 of section 33-24-05-527 with an instantaneous

feed rate limit not to exceed ten times the feed rate that would be allowed on an hourly rolling average basis; or

(c) An instantaneous limit not to be exceeded at any time.

b. Carcinogenic metals.

(1) The feed rates of arsenic, cadmium, beryllium, and chromium in all feedstreams, including hazardous waste, fuels, and industrial furnace feedstocks shall not exceed values derived from the screening limits specified in appendix XVI of chapter 33-24-05. The feed rate of each of these metals is limited to a level such that the sum of the ratios of the actual feed rate to the feed rate screening limit specified in appendix XVI of chapter 33-24-05 shall not exceed 1.0, as provided by the following equation:

$$\sum_{i=1}^{n} \frac{AFR_{(i)}}{FRSL_{(i)}} \leq 1.0$$

where:

n = number of carcinogenic metals

AFR = actual feed rate to the device for metal "i"

FRSL = feed rate screening limit provided by appendix XVI of chapter 33-24-05 for metal "i".

(2) The feed rate screening limits for the carcinogenic metals are based on either:

(a) An hourly rolling average; or

(b) An averaging period of two to twenty-four hours as defined in paragraph 2 of subdivision f of subsection 5 of section 33-24-05-527 with an instantaneous feed rate limit not to exceed ten times the feed rate that would be allowed in an hourly rolling average basis.

c. Terrain-adjusted effective stack height (TESH).

(1) The terrain-adjusted effective stack height is determined according to the following equation:

TESH = Ha+H1-Tr

where:

Ha = Actual physical stack height

H1 = Plume rise as determined from appendix XXI of chapter 33-24-05 as a function of stack flow rate and stack gas exhaust temperature.

Tr = Terrain rise within five kilometers of the stack.

(2) The stack height (Ha) may not exceed good engineering practice as specified in 40 CFR 51.100(ii).

(3) If the terrain-adjusted effective stack height for a particular facility is not listed in the table in the appendices, the nearest lower terrain-adjusted effective stack height listed in the table shall be used. If the terrain-adjusted effective stack height is four meters or less, a value of four meters shall be used.

d. Terrain type. The screening limits are a function of whether the facility is located in noncomplex or complex terrain. A device located where any part of the surrounding terrain within five kilometers of the stack equals or exceeds the elevation of the physical stack height (Ha) is considered to be in complex terrain and the screening limits for complex terrain apply. Terrain measurements are to be made from United States geological survey 7.5-minute topographic maps of the area surrounding the facility.

e. Land use. The screening limits are a function of whether the facility is located in an area where the land use is urban or rural. To determine whether land use in the vicinity of the facility is urban or rural, procedures provided in appendix XXIV or XXV of chapter 33-24-05 shall be used.

f. Multiple stacks. Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls of metals emissions under a hazardous waste operating permit or interim status controls must comply with the screening limits for all such units assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics. The worst-case stack is determined from the following equation as applied to each stack:

$K = HVT$

where:

K = a parameter accounting for relative influence of stack height and plume rise;

H = physical stack height (meters);

V = stack gas flow rate (m^3/second); and

T = exhaust temperature (°Kelvin).

The stack with the lowest value of K is the worst-case stack.

g. Criteria for facilities not eligible for screening limits. If any criteria below are met, the tier I (and tier II) screening limits do not apply. Owners and operators of such facilities must comply with either the tier III standards provided by subsection 4 or with the adjusted tier I feed rate screening limits provided by subsection 5.

(1) The device is located in a narrow valley less than one kilometer wide;

(2) The device has a stack taller than twenty meters and is located such that the terrain rises to the physical height within one kilometer of the facility;

(3) The device has a stack taller than twenty meters and is located within five kilometers of a shoreline of a large body of water such as an ocean or large lake;

(4) The physical stack height of any stack is less than 2.5 times the height of any building within five building heights or five projected building widths of the stack and the distance from the stack to the closest boundary is within five building heights or five projected building widths of the associated building; or

(5) The department determines that standards based on site-specific dispersion modeling are required.

h. Implementation. The feed rate of metals in each feedstream must be monitored to ensure that the feed rate screening limits are not exceeded.

3. **Tier II emission rate screening limits**. Emission rate screening limits are specified in appendix XVI of chapter 33-24-05 as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided in subdivision g of subsection 2.

a. Noncarcinogenic metals. The emission rates of antimony, barium, lead, mercury, thallium, and silver shall not exceed the screening limits specified in appendix XVI of chapter 33-24-05.

b. Carcinogenic metals. The emission rates of arsenic, cadmium, beryllium, and chromium shall not exceed values derived from the screening limits specified in appendix XVI of chapter 33-24-05. The emission rate of each of these metals is limited to a level such that the sum of the ratios of the actual emission rate to the emission rate screening limit specified in appendix XVI of chapter 33-24-05 shall not exceed 1.0, as provided by the following equation:

$$\sum_{i=1}^{n} \frac{AFR_{(i)}}{FRSL_{(i)}} \leq 1.0$$

where:

n = number of carcinogenic metals

AER = actual emission rate for metal "i"

ERSL = emission rate screening limit provided by appendix XVI for metal "i".

c. Implementation. The emission rate limits must be implemented by limiting feed rates of the individual metals to levels during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate averaging periods are the same as provided by paragraphs 1 and 2 of subdivision a of subsection 2 and paragraph 2 of subdivision b of subsection 2. The feed rate of metals in each feedstream must be monitored to ensure that the feed rate limits for the feedstreams specified under section 33-24-05-527 or 33-24-05-528 are not exceeded.

d. Definitions and limitations. The definitions and limitations provided by subsection 2 for the following terms also apply to the tier II emission rate screening limits provided by this subsection: terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

e. Multiple stacks.

(1) Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under a hazardous waste operating permit or interim status controls must comply with the emissions screening limits for any such stacks assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

(2) The worst-case stack is determined by procedures provided in subdivision f of subsection 2.

(3) For each metal, the total emissions of the metal from those stacks shall not exceed the screening limit for the worst-case stack.

4. **Tier III and adjusted tier I site-specific risk assessment. The requirements of this subsection apply to facilities complying with either the tier III or adjusted tier I controls, except where specified otherwise.**

a. General. Conformance with the tier III metals controls must be demonstrated by emissions testing to determine the emission rate for each metal. In addition, conformance with either the tier III or adjusted tier I metals controls must be determined by air dispersion modeling to predict the maximum annual average offsite ground level concentration for each metal, and a demonstration that acceptable ambient levels are not exceeded.

b. Acceptable ambient levels. Appendices XIX and XX of chapter 33-24-05 list the acceptable ambient levels for purposes of this rule. Reference air concentrations are listed for the noncarcinogenic metals and 10^{-5} risk-specific doses are listed for the carcinogenic metals. The risk-specific dose for a metal is the acceptable ambient level for that metal provided that only one of the four carcinogenic metals is emitted. If more than one carcinogenic metal is emitted, the acceptable ambient level for the carcinogenic metals is a fraction of the risk-specific dose as described in subdivision c.

c. Carcinogenic metals. For the carcinogenic metals arsenic, cadmium, beryllium, and chromium, the sum of the ratios of the predicted maximum annual average offsite ground level concentrations (except that onsite concentrations must be considered if a person resides onsite) to the risk-specific dose for all carcinogenic metals emitted shall not exceed 1.0 as determined by the following equation:

$$\sum_{i=1}^{n} \frac{\text{Predicted Ambient Concentration (i)}}{\text{Risk - Specific Dose (i)}} \leq 1.0$$

Where:

n = number of carcinogenic metals

d. Noncarcinogenic metals. For the noncarcinogenic metals, the predicted maximum annual average offsite ground level concentration for each metal shall not exceed the reference air concentration.

e. Multiple stacks. Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under a hazardous waste operating permit or interim status controls must conduct emissions testing (except that facilities complying with adjusted tier I controls need not conduct emissions testing) and dispersion modeling to demonstrate that the aggregate emissions from all such onsite stacks do not result in an exceedance of the acceptable ambient levels.

f. Implementation. Under tier III, the metals controls must be implemented by limiting feed rates of the individual metals to levels during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate averaging periods are the same as provided by paragraphs 1 and 2 of

subdivision a of subsection 2 and paragraph 2 of subdivision b of subsection 2. The feed rate of metals in each feedstream must be monitored to ensure that the feed rate limits for the feedstreams specified under section 33-24-05-527 or 33-24-05-528 are not exceeded.

5. **Adjusted tier I feed rate screening limits**. The owner or operator may adjust the feed rate screening limits provided by appendix XVI of chapter 33-24-05 to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit for a metal is determined by back-calculating from the acceptable ambient level provided by appendices XIX and XX of chapter 33-24-05 using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted tier I feed rate screening limit. The feed rate screening limits for carcinogenic metals are implemented as prescribed in subdivision b of subsection 2.

6. **Alternative implementation approaches**.

   a. The department may approve on a case-by-case basis approaches to implement the tier II or tier III metals emission limits provided by subsection 3 or 4 alternative to monitoring the feed rate of metals in each feedstream.

   b. The emission limits provided by subsection 4 must be determined as follows:

      (1) For each noncarcinogenic metal, by back-calculating from the reference air concentration provided in appendix XIX of chapter 33-24-05 to determine the allowable emission rate for each metal using the dilution factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with subsection 8; and

      (2) For each carcinogenic metal by:

         (a) Back-calculating from the risk-specific dose provided in appendix XX of chapter 33-24-05 to determine the allowable emission rate for each metal if that metal were the only carcinogenic metal emitted using the dilution factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with subsection 8; and

         (b) If more than one carcinogenic metal is emitted, selecting an emission limit for each carcinogenic metal not to exceed the emission rate determined by subparagraph a such that the sum for all carcinogenic metals of the ratios of the selected emission limit to the emission rate determined by that subparagraph does not exceed 1.0.

7. **Emission testing**.

   a. General. Emission testing for metals shall be conducted using method 0060, "Determinations of Metals in Stack Emissions", environmental protection agency publication SW-846, incorporated by reference in section 33-24-01-05.

   b. Hexavalent chromium. Emissions of chromium are assumed to be hexavalent chromium unless the owner or operator conducts emissions testing to determine hexavalent chromium emissions using procedures prescribed in method 0061, "Determination of Hexavalent Chromium Emissions from Stationary Sources", environmental protection agency publication SW-846, incorporated by reference in section 33-24-01-05.

8. **Dispersion modeling**. Dispersion modeling required under this section shall be conducted according to methods recommended in appendix W of 40 CFR part 51 ("Guidelines on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion

Air Quality Screening Procedure" provided in appendix XXIV of chapter 33-24-05, or in "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, revised" (incorporated by reference in section 33-24-01-05) to predict the maximum annual average offsite ground level concentration. However, onsite concentrations must be considered when a person resides onsite.

9. **Enforcement**. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 33-24-05-527) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and reissuance of a permit under section 33-24-06-12.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05, 23-20.3-09

33-24-05-532. Standards to control hydrogen chloride (HCl) and chlorine gas (Cl_2) emissions.

1. **General**. The owner or operator must comply with the hydrogen chloride and chlorine controls provided by subsection 2, 3, or 5.

2. **Screening limits**.

   a. Tier I feed rate screening limits. Feed rate screening limits are specified for total chlorine in appendix XVII as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The feed rate of total chlorine and chloride, both organic and inorganic, in all feedstreams, including hazardous waste, fuels, and industrial furnace feedstocks, shall not exceed the levels specified.

   b. Tier II emission rate screening limits. Emission rates screening limits for hydrogen chloride and chlorine are specified in appendix XVIII as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The stack emission rates of hydrogen chloride and chlorine shall not exceed the levels specified.

   c. Definitions and limitations. The definitions and limitations provided by subsection 2 of section 33-24-05-531 for the following terms also apply to the screening limits provided by this subsection: terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

   d. Multiple stacks. Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on hydrogen chloride or chlorine emissions under a hazardous waste operating permit or interim status controls must comply with the tier I and tier II screening limits for those stacks assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

      (1) The worst-case stack is determined by procedures provided in subdivision f of subsection 2 of section 33-24-05-531.

      (2) Under tier I, the total feed rate of chlorine and chloride to all subject devices shall not exceed the screening limit for the worst-case stack.

      (3) Under tier II, the total emissions of hydrogen chloride and chlorine from all subject stacks shall not exceed the screening limit for the worst-case stack.

3. **Tier III site-specific risk assessments**.

a. General. Conformance with the tier III controls must be demonstrated by emissions testing to determine the emission rate for hydrogen chloride and chlorine, air dispersion modeling to predict the maximum annual average offsite ground level concentration for each compound, and a demonstration that acceptable ambient levels are not exceeded.

b. Acceptable ambient levels. Appendix XIX of chapter 33-24-05 lists the reference air concentrations for hydrogen chloride (7 micrograms per cubic meter) and chlorine (0.4 micrograms per cubic meter).

c. Multiple stacks. Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on hydrogen chloride or chlorine emissions under a hazardous waste operating permit or interim status controls must conduct emissions testing and dispersion modeling to demonstrate that the aggregate emissions from all such onsite stacks do not result in an exceedance of the acceptable ambient levels for hydrogen chloride and chlorine.

4. **Averaging periods**. The hydrogen chloride and chlorine controls are implemented by limiting the feed rate of total chlorine and chloride in all feedstreams, including hazardous waste, fuels, and industrial furnace feedstocks. Under tier I, the feed rate of total chloride and chlorine is limited to the tier I screening limits. Under tier II and tier III, the feed rate of total chloride and chlorine is limited to the feed rates during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate limits are based on either:

   a. An hourly rolling average as defined in subdivision f of subsection 5 of section 33-24-05-527; or

   b. An instantaneous basis not to be exceeded at any time.

5. **Adjusted tier I feed rate screening limits**. The owner or operator may adjust the feed rate screening limit provided by appendix XVII of chapter 33-24-05 to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit is determined by back-calculating from the acceptable ambient level for chlorine provided by appendix XIX of chapter 33-24-05 using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted tier I feed rate screening limit.

6. **Emissions testing**. Emissions testing for hydrogen chloride and chlorine shall be conducted using the procedures described in methods 0050 or 0051, environmental protection agency publication SW-846, incorporated by reference in section 33-24-01-05.

7. **Dispersion modeling**. Dispersion modeling shall be conducted according to the provisions of subsection 8 of section 33-24-05-531.

8. **Enforcement**. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 33-24-05-527) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and reissuance of a permit under section 33-24-06-12.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05, 23-20.3-09

33-24-05-533. Small quantity onsite burner exemption.

1. **Exempt quantities.** Owners and operators of facilities that burn hazardous waste in an onsite boiler or industrial furnace are exempt from the requirements of sections 33-24-05-525 through 33-24-05-549 provided that:

   a. The quantity of hazardous waste burned in a device for a calendar month does not exceed the limits provided in the following table based on the terrain-adjusted effective stack height as defined in subdivision c of subsection 2 of section 33-24-05-531:

Exempt Quantities for Small Quantity Burner Exemption			
Terrain-Adjusted Effective Stack Height of Device (Meters)	Allowable Hazardous Waste Burning Rate (Gallons/Month)	Terrain-Adjusted Effective Stack Height of Device (Meters)	Allowable Hazardous Waste Burning Rate (Gallons/Month)
0 to 3.9	0	40.0 to 44.9	210
4.0 to 5.9	13	45.0 to 49.9	260
6.0 to 7.9	18	50.0 to 54.9	330
8.0 to 9.9	27	55.0 to 59.9	400
10.0 to 11.9	40	60.0 to 64.9	490
12.0 to 13.9	48	65.0 to 69.9	610
14.0 to 15.9	59	70.0 to 74.9	680
16.0 to 17.9	69	75.0 to 79.9	760
18.0 to 19.9	76	80.0 to 84.9	850
20.0 to 21.9	84	85.0 to 89.9	960
22.0 to 23.9	93	90.0 to 94.9	1,100
24.0 to 25.9	100	95.0 to 99.9	1,200
26.0 to 27.9	110	100.0 to 104.9	1,300
28.0 to 29.9	130	105.0 to 109.9	1,500
30.0 to 34.9	140	110.0 to 114.9	1,700
35.0 to 39.9	170	115.0 or greater	1,900

   b. The maximum hazardous waste firing rate does not exceed at any time one percent of the total fuel requirements for the device (hazardous waste plus other fuel) on a total heat input or mass input basis, whichever results in the lower mass feed rate of hazardous waste;

   c. The hazardous waste has a minimum heating value of five thousand British thermal units per pound as generated; and

   d. The hazardous waste fuel does not contain (and is not derived from) hazardous waste number F020, F021, F022, F023, F026, or F027.

2. **Mixing with nonhazardous fuels.** If hazardous waste fuel is mixed with a nonhazardous fuel, the quantity of hazardous waste before such mixing is used to comply with subsection 1.

3. **Multiple stacks.** If an owner or operator burns hazardous waste in more than one onsite boiler or industrial furnace exempt under this section, the quantity limits provided by subdivision a of subsection 1 are implemented according to the following equation:

$$\sum_{i=1}^{n} \frac{\text{Actual Quantity Burned}_{(i)}}{\text{Allowable Quantity Burned}_{(i)}} \leq 1.0$$

where:

n = number of stacks;

Actual quantity burned means the waste quantity burned per month in device "i";

Allowable quantity burned means the maximum allowable exempt quantity for stack "i" from the table in subdivision a of subsection 1.

Note: Hazardous wastes that are subject to the special requirements for small quantity generators under section 33-24-02-05 may be burned in an offsite device under the exemption provided by section 33-24-05-533, but must be included in the quantity determination for the exemption.

4. **Notification requirements.** The owner or operator of facilities qualifying for the small quantity burner exemption under this section must provide a one-time signed, written notice to the department indicating the following:

   a. The combustion unit is operating as a small quantity burner of hazardous waste;

   b. The owner and operator are in compliance with the requirements of this section; and

   c. The maximum quantity of hazardous waste that the facility may burn per month as provided by subdivision a of subsection 1.

5. **Recordkeeping requirements.** The owner or operator must maintain at the facility for at least three years sufficient records documenting compliance with the hazardous waste quantity, firing rate, and heating value limits. At a minimum, these records must indicate the quantity of hazardous waste and other fuel burned in each unit per calendar month, and the heating value of the hazardous waste.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-534. Low risk waste exemption.

1. **Waiver of destruction and removal efficiency standard.** The destruction and removal efficiency standard of subsection 1 of section 33-24-05-529 does not apply if the boiler or industrial furnace is operated in conformance with subdivision a of subsection 1 and the owner or operator demonstrates by procedures prescribed in subdivision b of subsection 1 that the burning will not result in unacceptable adverse health effects.

   a. The device shall be operated as follows:

      (1) A minimum of fifty percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the department on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel.

Such fuels are termed "primary fuel" for purposes of this section. (Tall oil is a fuel derived from vegetable and rosin fatty acids.) The fifty percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

(2) Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of eight thousand British thermal units per pound;

(3) The hazardous waste is fired directly into the primary fuel flame zone of the combustion chamber; and

(4) The device operates in conformance with the carbon monoxide controls provided by subdivision a of subsection 2 of section 33-24-05-529. Devices subject to the exemption provided by this section are not eligible for the alternative carbon monoxide controls provided by subsection 3 of section 33-24-05-529.

b. Procedures to demonstrate that the hazardous waste burning will not pose unacceptable adverse public health effects are as follows:

(1) Identify and quantify those nonmetal compounds listed in appendix V of chapter 33-24-02 that could reasonably be expected to be present in the hazardous waste. The constituents excluded from analysis must be identified and the basis for their exclusion explained.

(2) Calculate reasonable, worst-case emission rates for each constituent identified in paragraph 1 by assuming the device achieves 99.9 percent destruction and removal efficiency. That is, assume that 0.1 percent of the mass weight of each constituent fed to the device is emitted.

(3) For each constituent identified in paragraph 1, use emissions dispersion modeling to predict the maximum annual average ground level concentration of the constituent.

(a) Dispersion modeling shall be conducted using methods specified in subsection 8 of section 33-24-05-531.

(b) Owners and operators of facilities with more than one onsite stack from a boiler or industrial furnace that is exempt under this section must conduct dispersion modeling of emissions from all stacks exempt under this section to predict ambient levels prescribed by this subdivision.

(4) Ground level concentrations of constituents predicted under paragraph 3 must not exceed the following levels:

(a) For the noncarcinogenic compounds listed in appendix XIX of chapter 33-24-05, the levels established in appendix XIX of chapter 33-24-05;

(b) For the carcinogenic compounds listed in appendix XX of chapter 33-24-05, the sum for all constituents of the ratios of the actual ground level concentration to the level established in appendix XX of chapter 33-24-05 cannot exceed 1.0; and

(c) For constituents not listed in appendix XIX or XX of chapter 33-24-05, 0.1 micrograms per cubic meter.

2. **Waiver of particulate matter standard.** The particulate matter standard of section 33-24-05-530 does not apply if:

a. The destruction and removal efficiency standard is waived under subsection 1; and

b. The owner or operator complies with the tier I or adjusted tier I metals feed rate screening limits provided by subsection 2 or 5 of section 33-24-05-531.

History: Effective July 1, 1997; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-535. Waiver of destruction and removal efficiency trial burn for boilers.

Boilers that operate under the special requirements of this section, and that do not burn hazardous waste containing (or derived from) hazardous waste number F020, F021, F022, F023, F026, or F027, are considered to be in conformance with the destruction and removal efficiency standard of subsection 1 of section 33-24-05-529, and a trial burn to demonstrate destruction and removal efficiency is waived. When burning hazardous waste:

1. A minimum of fifty percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the department on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel. Such fuels are termed "primary fuel" for purposes of this section. (Tall oil is a fuel derived from vegetable and rosin fatty acids.) The fifty percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

2. Boiler load shall not be less than forty percent. Boiler load is the ratio at any time of the total heat input to the maximum design heat input;

3. Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of eight thousand British thermal units per pound, and each material fired in a burner where hazardous waste is fired must have a heating value of at least eight thousand British thermal units per pound, as-fired;

4. The device shall operate in conformance with the carbon monoxide standard provided by subdivision a of subsection 2 of section 33-24-05-529. Boilers subject to the waiver of the destruction and removal efficiency trial burn provided by this section are not eligible for the alternative carbon monoxide standard provided by subsection 3 of section 33-24-05-529;

5. The boiler must be a watertube type boiler that does not feed fuel using a stoker or stoker type machanism; and

6. The hazardous waste shall be fired directly into the primary fuel flame zone of the combustion chamber with an air or steam atomization firing system, mechanical atomization system, or a rotary cup atomization system under the following conditions:

   a. Viscosity. The viscosity of the hazardous waste fuel as-fired shall not exceed three hundred SSU;

   b. Particle size. When a high pressure air or steam atomizer, low pressure atomizer, or mechanical atomizer is used, seventy percent of the hazardous waste fuel must pass through a 200 mesh (74 micron) screen, and when a rotary cup atomizer is used, seventy percent of the hazardous waste must pass through a 100 mesh (150 micron) screen;

   c. Mechanical atomization systems. Fuel pressure within a mechanical atomization system and fuel flow rate shall be maintained within the design range taking into account the viscosity and volatility of the fuel;

d. Rotary cup atomization systems. Fuel flow rate through a rotary cup atomization system must be maintained within the design range taking into account the viscosity and volatility of the fuel.

History: Effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-536. Standards for direct transfer.

1. **Applicability.** The regulations in this section apply to owners and operators of boilers and industrial furnaces subject to section 33-24-05-527 or 33-24-05-528 if hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit.

2. **Definitions.**

   a. When used in this section, the following terms have the meanings given below:

      (1) Direct transfer equipment means any device (including but not limited to, such devices as piping, fittings, flanges, valves, and pumps) that is used to distribute, meter, or control the flow of hazardous waste between a container (for example, transport vehicle) and a boiler or industrial furnace.

      (2) Container means any portable device in which hazardous waste is transported, stored, treated, or otherwise handled, and includes transport vehicles that are containers themselves (for example, tank trucks, tanker-trailers, and rail tank cars), and containers placed on or in a transport vehicle.

   b. This section references several requirements provided in sections 33-24-05-89 through 33-24-05-117 and subsection 5 of section 33-24-06-16. For purposes of this section, the term "tank systems" in those referenced requirements means direct transfer equipment as defined in subdivision a.

3. **General operating requirements.**

   a. No direct transfer of a pumpable hazardous waste shall be conducted from an open-top container to a boiler or industrial furnace.

   b. Direct transfer equipment used for pumpable hazardous waste shall always be closed, except when necessary to add or remove the waste, and shall not be opened, handled, or stored in a manner that may cause any rupture or leak.

   c. The direct transfer of hazardous waste to a boiler or industrial furnace shall be conducted so that it does not:

      (1) Generate extreme heat or pressure, fire, explosion, or violent reaction;

      (2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

      (3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

      (4) Damage the structural integrity of the container or direct transfer equipment containing the waste;

(5) Adversely affect the capability of the boiler or industrial furnace to meet the standards provided by sections 33-24-05-529 through 33-24-05-632; or

(6) Threaten human health or the environment.

d. Hazardous waste shall not be placed in direct transfer equipment if it could cause the equipment or its secondary containment system to rupture, leak, corrode, or otherwise fail.

e. The owner or operator of the facility shall use appropriate controls and practices to prevent spills and overflows from the direct transfer equipment or its secondary containment systems. These include at a minimum:

(1) Spill prevention controls (for example, check valves, dry discount couplings); and

(2) Automatic waste feed cutoff to use if a leak or spill occurs from the direct transfer equipment.

4. **Areas where direct transfer vehicles (containers) are located.** Applying the definition of container under this section, owners and operators must comply with the following requirements:

a. The containment requirements of section 33-24-05-94;

b. The use and management requirements of sections 33-24-05-89 through 33-24-05-102 except for sections 33-24-05-89, 33-24-05-93, and 33-24-05-97, and except that in lieu of the special requirements of section 33-24-05-95 for ignitable or reactive waste, the owner or operator may comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjacent property line that can be built upon as required in tables 2-1 through 2-6 of the National Fire Protection Association's (NFPA) "Flammable and Combustible Liquids Code", (1977 or 1981), as incorporated by reference, see section 33-24-01-05. The owner or operator must obtain and keep on file at the facility a written certification by the local fire marshal that the installation meets the subject National Fire Protection Association codes; and

c. The closure requirements of section 33-24-05-97.

5. **Direct transfer equipment.** Direct transfer equipment must meet the following requirements:

a. Secondary containment. Owners and operators shall comply with the secondary containment requirements of section 33-24-05-106, except for subsections 1, 4, 5, and 9:

(1) For all new direct transfer equipment, prior to their being put into service; and

(2) For existing direct transfer equipment within two years after August 21, 1991.

b. Requirements prior to meeting secondary containment requirements.

(1) For existing direct transfer equipment that does not have secondary containment, the owner or operator shall determine whether the equipment is leaking or is unfit for use. The owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by a qualified, registered professional engineer in accordance with subsection 4 of section 33-24-06-02 that attests to the equipment's integrity by August 21, 1992.

(2) This assessment shall determine whether the direct transfer equipment is adequately designed and has sufficient structural strength and compatibility with the

waste or wastes to be transferred to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment shall consider the following:

(a) Design standard or standards, if available according to which the direct transfer equipment was constructed;

(b) Hazardous characteristics of the waste or wastes that have been or will be handled;

(c) Existing corrosion protection measures;

(d) Documented age of the equipment, if available, (otherwise, an estimate of the age); and

(e) Results of a leak test or other integrity examination such that the effects of temperature variations, vapor pockets, cracks, leaks, corrosion, and erosion are accounted for.

(3) If, as a result of the assessment specified above, the direct transfer equipment is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of subsections 1 and 2 of section 33-24-05-109.

c. Inspections and recordkeeping.

(1) The owner or operator must inspect at least once each operating hour when hazardous waste is being transferred from the transport vehicle (container) to the boiler or industrial furnace:

(a) Overfill/spill control equipment (for example, waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;

(b) The aboveground portions of the direct transfer equipment to detect corrosion, erosion, or releases of waste (for example, wet spots, dead vegetation); and

(c) Data gathered from monitoring equipment and leak-detection equipment (for example, pressure and temperature gauges) to ensure that the direct transfer equipment is being operated according to its design.

(2) The owner or operator must inspect cathodic protection systems, if used, to ensure that they are functioning properly according to the schedule provided by subsection 6 of section 33-24-05-108.

(3) Records of inspections made under this subdivision shall be maintained in the operating record at the facility, and available for inspection for at least three years from the date of the inspection.

d. Design and installation of new ancillary equipment. Owners and operators must comply with the requirements of section 33-24-05-105.

e. Response to leaks or spills. Owners and operators must comply with the requirements of section 33-24-05-109.

f. Closure. Owners and operators must comply with the requirements of section 33-24-05-110 except for subdivisions b and d of subsection 3.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-537. Regulation of residues.

A residue derived from the burning or processing of hazardous waste in a boiler or industrial furnace is not excluded from the definition of a hazardous waste under subdivision d, g, or h of subsection 2 of section 33-24-02-04 unless the device and the owner or operator meet the following requirements:

1. The device meets the following criteria:

   a. Boilers. Boilers must burn at least fifty percent coal on a total heat input or mass input basis, whichever results in the greater mass feed rate or coal;

   b. Ore or mineral furnaces. Industrial furnaces subject to subdivision g of subsection 2 of section 33-24-02-04 must process at least fifty percent by weight normal, nonhazardous raw materials; and

   c. Cement kilns. Cement kilns must process at least fifty percent by weight normal cement-production raw materials;

2. The owner or operator demonstrates that the hazardous waste does not significantly affect the residue by demonstrating conformance with either of the following criteria:

   a. Comparison of waste-derived residue with normal residue. The waste-derived residue must not contain appendix V of chapter 33-24-02 constituents (toxic constituents) that could reasonably be attributable to the hazardous waste at concentrations significantly higher than in residue generated without burning or processing of hazardous waste, using the following procedure. Toxic compounds that could reasonably be attributable to burning or processing the hazardous waste (constituents of concern) include toxic constituents in the hazardous waste, and the organic compounds listed in appendix XXIII of chapter 33-24-05 that may be generated as products of incomplete combustion. For polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans, analyses must be performed to determine specific congeners and homologues, and the results converted to 2,3,7,8-TCDD equivalent values using the procedure specified in section 4.0 of appendix XXIV of chapter 33-24-05.

      (1) Normal residue. Concentrations of toxic constituents of concern in normal residue shall be determined based on analyses of a minimum of ten samples representing a minimum of ten days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed twenty-four hours. The upper tolerance limit (at ninety-five percent confidence with a ninety-five percent proportion of the sample distribution) of the concentration in the normal residue shall be considered the statistically derived concentration in the normal residue. If changes in raw materials or fuels reduce the statistically derived concentrations of the toxic constituents of concern in the normal residue, the statistically derived concentrations must be revised or statistically derived concentrations of toxic constituents in normal residue must be established for a new mode of operation with the new raw material or fuel. To determine the upper tolerance limit in the normal residue, the owner or operator shall use statistical procedures prescribed in "Statistical Methodology for Bevill Residue Determinations" in appendix XXIV of chapter 33-24-05;

      (2) Waste-derived residue. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each twenty-four-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under paragraph 1. If so, hazardous waste burning has significantly affected the residue and the residue shall

not be excluded from the definition of a hazardous waste. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a twenty-four-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed twenty-four hours. If more than one sample is analyzed to characterize waste-derived residues generated over a twenty-four-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; or

b. Comparison of waste-derived residue concentrations with health-based limits.

(1) Nonmetal constituents. The concentration of each nonmetal toxic constituent of concern (specified in subdivision a) in the waste-derived residue must not exceed the health-based level specified in appendix XXII of chapter 33-24-05, or the level of detection, whichever is higher. If a health-based limit for a constituent of concern is not listed in appendix XXII of chapter 33-24-05, then a limit of 0.002 micrograms per kilogram or the level of detection (which must be determined by using appropriate analytical procedures), whichever is higher, must be used. The levels specified in appendix XXII of chapter 33-24-05 (and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in note 1 of appendix XXII of chapter 33-24-05) are administratively stayed under the condition, for those constituents specified in subdivision a, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in section 33-24-05-283 for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of best good-faith efforts as defined by applicable department guidance or standards, the owner or operator is deemed to be in compliance for that constituent. Until new guidance or standards are developed, the owner or operator may demonstrate such good-faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above the level provided by section 33-24-05-283 for F039 nonwastewaters. In complying with the section 33-24-05-283 F039 nonwastewater levels for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans, analyses must be performed for total hexachlorodibenzo-p-dioxins, total hexachlorodibenzofurans, total pentachlorodibenzo-p-dioxins, total pentachlorodibenzofurans, total tetrachlorodibenzo-p-dioxins, and total tetrachlorodibenzofurans;

(2) Metal constituents. The concentration of metals in an extract obtained using the toxicity characteristic leaching procedure of section 33-24-02-14 must not exceed the levels specified in appendix XXII of chapter 33-24-05; and

(3) Sampling and analysis. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each twenty-four-hour period has concentrations of toxic constituents that are higher than the health-based levels. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a twenty-four-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed twenty-four hours. If more than one sample is analyzed to characterize waste-derived residues generated over a twenty-four-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; and

3. Records sufficient to document compliance with the provisions must be retained until closure of the boiler or industrial furnace unit. At a minimum, the following shall be recorded:

   a. Levels of constituents in appendix V of chapter 33-24-02, that are present in waste-derived residues; and

   b. If the waste-derived residue is compared with normal residue under subdivision a of subsection 2:

      (1) The levels of constituents in appendix V of chapter 33-24-02, that are present in normal residues; and

      (2) Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-538. [Reserved]

33-24-05-539. [Reserved]

33-24-05-540. [Reserved]

33-24-05-541. [Reserved]

33-24-05-542. [Reserved]

33-24-05-543. [Reserved]

33-24-05-544. [Reserved]

33-24-05-545. [Reserved]

33-24-05-546. [Reserved]

33-24-05-547. [Reserved]

33-24-05-548. [Reserved]

33-24-05-549. [Reserved]

33-24-05-550. Applicability of corrective action management unit (CAMU) regulations.

1. Except as provided in subsection 2, corrective action management units are subject to the requirements of section 33-24-05-552.

2. Corrective action management units that were approved before April 22, 2002, or for which substantially complete applications (or equivalents) were submitted to the department on or before November 20, 2000, are subject to the requirements in section 33-24-05-551 for grandfathered corrective action management units; corrective action management unit waste, activities, and design will not be subject to the standards in section 33-24-05-552, so long as the waste, activities, and design remain within the general scope of the corrective action management unit as approved.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-551. Grandfathered corrective action management units (CAMUs).

1. To implement remedies under section 33-24-05-58 or Resource Conservation and Recovery Act section 3008(h), or to implement remedies at a permitted facility that is not subject to section 33-24-05-58, the department may designate an area at the facility as a corrective action management unit under the requirements of this section. Corrective action management unit means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. A corrective action management unit must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the corrective action management unit originated. One or more corrective action management units may be designated at a facility.

   a. Placement of remediation wastes into or within a corrective action management unit does not constitute land disposal of hazardous wastes.

   b. Consolidation or placement of remediation wastes into or within a corrective action management unit does not constitute creation of a unit subject to minimum technology requirements.

2. The department may designate a regulated unit as a corrective action management unit in accordance with the following:

   a. The department may designate a regulated unit (as defined in subdivision b of subsection 1 of section 33-24-05-47) as a corrective action management unit, or may incorporate a regulated unit into a corrective action management unit, if:

      (1) The regulated unit is closed or closing, meaning it has begun the closure process under section 33-24-05-62; and

      (2) Inclusion of the regulated unit will enhance implementation of effective, protective, and reliable remedial actions for the facility.

   b. The sections 33-24-05-47 through 33-24-05-88 requirements and the unit-specific requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819 that applied to that regulated unit will continue to apply to that portion of the corrective action management unit after incorporation into the corrective action management unit.

3. The department shall designate a corrective action management unit in accordance with the following:

   a. The corrective action management unit shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

b. Waste management activities associated with the corrective action management unit shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

c. The corrective action management unit may include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility;

d. Areas within the corrective action management unit, where wastes remain in place after closure of the corrective action management unit, shall be managed and contained so as to minimize future releases, to the extent practicable;

e. The corrective action management unit shall expedite the timing of remedial activity implementation, when appropriate and practicable;

f. The corrective action management unit shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the corrective action management unit; and

g. The corrective action management unit shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the corrective action management unit.

4. The owner or operator shall provide sufficient information to enable the department to designate a corrective action management unit in accordance with the criteria in section 33-24-05-552.

5. The department shall specify, in the permit or order, requirements for corrective action management units to include the following:

a. The areal configuration of the corrective action management unit.

b. Requirements for remediation waste management to include the specification of applicable design, operation, and closure requirements.

c. Requirements for ground water monitoring that are sufficient to:

(1) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the corrective action management unit; and

(2) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the corrective action management unit in which wastes will remain in place after closure of the corrective action management unit.

d. Closure and postclosure requirements.

(1) Closure of corrective action management units shall:

(a) Minimize the need for further maintenance; and

(b) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

(2) Requirements for closure of corrective action management units shall include the following, as appropriate and as deemed necessary by the department for a given corrective action management unit:

(a) Requirements for excavation, removal, treatment, or containment of wastes;

(b) For areas in which wastes will remain after closure of the corrective action management unit, requirements for capping of such areas; and

(c) Requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the corrective action management unit.

(3) In establishing specific closure requirements for corrective action management units under this subsection, the department shall consider the following factors:

(a) Corrective action management unit characteristics;

(b) Volume of wastes which remain in place after closure;

(c) Potential for releases from the corrective action management unit;

(d) Physical and chemical characteristics of the waste;

(e) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and

(f) Potential for exposure of humans and environmental receptors if releases were to occur from the corrective action management unit.

(4) Postclosure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

6. The department shall document the rationale for designating corrective action management units and shall make such documentation available to the public.

7. Incorporation of a corrective action management unit into an existing permit must be approved by the department according to the procedures for department-initiated permit modifications under section 33-24-06-12, or according to the permit modification procedures of section 33-24-06-14.

8. The designation of a corrective action management unit does not change the department's existing authority to address cleanup levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-552. Corrective action management unit (CAMU).

1. To implement remedies under section 33-24-05-58 or Resource Conservation and Recovery Act section 3008(h), or to implement remedies at a permitted facility that is not subject to section 33-24-05-58, the department may designate an area at the facility as a corrective action management unit under the requirements in this section. Corrective action

management unit means an area within a facility that is used only for managing corrective action management unit-eligible wastes for implementing corrective action or cleanup at the facility. A corrective action management unit must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the corrective action management unit originated. One or more corrective action management units may be designated at a facility.

a. Corrective action management unit-eligible waste means:

(1) All solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, that are managed for implementing cleanup. As-generated wastes (either hazardous or nonhazardous) from ongoing industrial operations at a site are not corrective action management unit-eligible wastes.

(2) Wastes that would otherwise meet the description in paragraph 1 are not "corrective action management unit-eligible wastes" where:

(a) The wastes are hazardous wastes found during cleanup in intact or substantially intact containers, tanks, or other nonland-based units found aboveground, unless the wastes are first placed in the tanks, containers, or nonland-based units as part of cleanup, or the containers or tanks are excavated during the course of cleanup; or

(b) The department exercises the discretion in subdivision b to prohibit the wastes from management in a corrective action management unit.

(3) Notwithstanding paragraph 1, where appropriate, as-generated nonhazardous waste may be placed in a corrective action management unit where such waste is being used to facilitate treatment or the performance of the corrective action management unit.

b. The department may prohibit, where appropriate, the placement of waste in a corrective action management unit where the department has or receives information that such wastes have not been managed in compliance with applicable land disposal treatment standards of sections 33-24-05-250 through 33-24-05-299, or applicable unit design requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819, or applicable unit design requirements under subsection 5 of section 33-24-06-16, or that noncompliance with other applicable requirements of article 33-24 likely contributed to the release of the waste.

c. Prohibition against placing liquids in corrective action management units.

(1) The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any corrective action management unit is prohibited except where placement of such wastes facilitates the remedy selected for the waste.

(2) The requirements in subsection 3 of section 33-24-05-183 for placement of containers holding free liquids in landfills apply to placement in a corrective action management unit except where placement facilitates the remedy selected for the waste.

(3) The placement of any liquid which is not a hazardous waste in a corrective action management unit is prohibited unless such placement facilitates the remedy

selected for the waste or a demonstration is made pursuant to subsection 5 of section 33-24-05-183.

(4) The absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with subsection 2 of section 33-24-05-183. Sorbents used to treat free liquids in corrective action management units must meet the requirements of subsection 4 of section 33-24-05-183.

d. Placement of corrective action management unit-eligible wastes into or within a corrective action management unit does not constitute land disposal of hazardous wastes.

e. Consolidation or placement of corrective action management unit-eligible wastes into or within a corrective action management unit does not constitute creation of a unit subject to minimum technology requirements.

2. Requirements for regulated units.

a. The department may designate a regulated unit (as defined in subdivision b of subsection 1 of section 33-24-05-47) as a corrective action management unit, or may incorporate a regulated unit into a corrective action management unit, if:

(1) The regulated unit is closed or closing, meaning it has begun the closure process under section 33-24-05-62 or applicable requirements of subsection 5 of section 33-24-06-16; and

(2) Inclusion of the regulated unit will enhance implementation of effective, protective, and reliable remedial actions for the facility.

b. The requirements of sections 33-24-05-47 through 33-24-05-88 and the unit-specific requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819, or applicable requirements of subsection 5 of section 33-24-06-16 that applied to the regulated unit will continue to apply to that portion of the corrective action management unit after incorporation into the corrective action management unit.

3. The department shall designate a corrective action management unit that will be used for storage or treatment, or both, only in accordance with subsection 6. The department shall designate all other corrective action management units in accordance with the following:

a. The corrective action management unit shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

b. Waste management activities associated with the corrective action management unit shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

c. The corrective action management unit shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing corrective action management unit-eligible waste is more protective than management of such wastes at contaminated areas of the facility;

d. Areas within the corrective action management unit, where wastes remain in place after closure of the corrective action management unit, shall be managed and contained so as to minimize future releases, to the extent practicable;

e. The corrective action management unit shall expedite the timing of remedial activity implementation, when appropriate and practicable;

f. The corrective action management unit shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the corrective action management unit; and

g. The corrective action management unit shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the corrective action management unit.

4. The owner or operator shall provide sufficient information to enable the department to designate a corrective action management unit in accordance with the criteria in this section. This must include, unless not reasonably available, information on:

a. The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal or release, or both);

b. Whether the waste was listed or identified as hazardous at the time of disposal or release, or both; and

c. Whether the disposal or release, or both, of the waste occurred before or after the land disposal requirements of section 33-24-05-250 through 33-24-05-299 were in effect for the waste listing or characteristic.

5. The department shall specify, in the permit or order, requirements for corrective action management units to include the following:

a. The areal configuration of the corrective action management unit.

b. Except as provided in subsection 7, requirements for corrective action management unit-eligible waste management to include the specification of applicable design, operation, treatment, and closure requirements.

c. Minimum design requirements. Corrective action management units, except as provided in subsection 6, into which wastes are placed must be designed in accordance with the following:

(1) Unless the department approves alternate requirements under paragraph 2, corrective action management units that consist of new, replacement, or laterally expanded units must include a composite liner and a leachate collection system that is designed and constructed to maintain less than a thirty-centimeter depth of leachate over the liner. For purposes of this paragraph, composite liner means a system consisting of two components; the upper component must consist of a minimum thirty mil flexible membrane liner, and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ centimeters per second. Flexible membrane liner components consisting of high density polyethylene must be at least sixty mil thick. The flexible membrane liner component must be installed in direct and uniform contact with the compacted soil component; and

(2) Alternate requirements. The department may approve alternate requirements if:

(a) The department finds that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous

constituents into the ground water or surface water at least as effectively as the liner and leachate collection systems in paragraph 1; or

(b) The corrective action management unit is to be established in an area with existing significant levels of contamination, and the department finds that an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long-term remedial goals.

d. Minimum treatment requirements. Unless the wastes will be placed in a corrective action management unit for storage or treatment, or both, only in accordance with subsection 6, corrective action management unit-eligible wastes that, absent this subdivision, would be subject to the treatment requirements of sections 33-24-05-250 through 33-24-05-299, and that the department determines contain principal hazardous constituents must be treated to the standards specified in paragraph 3.

(1) Principal hazardous constituents are those constituents that the department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

(a) In general, the department will designate as principal hazardous constituents:

[1] Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3}; and

[2] Noncarcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.

(b) The department will also designate constituents as principal hazardous constituents, where appropriate, when risks to human health and the environment posed by the potential migration of constituents in wastes to ground water are substantially higher than cleanup levels or goals at the site; when making such a designation, the department may consider such factors as constituent concentrations, and fate and transport characteristics under site conditions.

(c) The department may also designate other constituents as principal hazardous constituents that the department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

(2) In determining which constituents are "principal hazardous constituents", the department must consider all constituents which, absent this subdivision, would be subject to the treatment requirements in sections 33-24-05-250 through 33-24-05-299.

(3) Waste that the department determines contains principal hazardous constituents must meet treatment standards determined in accordance with paragraph 4 or 5.

(4) Treatment standards for wastes placed in corrective action management units.

(a) For nonmetals, treatment must achieve ninety percent reduction in total principal hazardous constituent concentrations, except as provided by subparagraph c.

(b) For metals, treatment must achieve ninety percent reduction in principal hazardous constituent concentrations as measured in leachate from the

treated waste or media (tested according to the toxicity characteristic leaching procedure) or ninety percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by subparagraph c.

(c) When treatment of any principal hazardous constituent to a ninety percent reduction standard would result in a concentration less than ten times the universal treatment standard for that constituent, treatment to achieve constituent concentrations less than ten times the universal treatment standard is not required. Universal treatment standards are identified in section 33-24-05-288 table UTS.

(d) For waste exhibiting the hazardous characteristic of ignitability, corrosivity, or reactivity, the waste must also be treated to eliminate these characteristics.

(e) For debris, the debris must be treated in accordance with section 33-24-05-285, or by methods or to levels established under subparagraphs a through d or paragraph 5, whichever the department determines is appropriate.

(f) Alternatives to toxicity characteristic leaching procedure. For metal-bearing wastes for which metals removal treatment is not used, the department may specify a leaching test other than the toxicity characteristic leaching procedure (SW-846 method 1311, paragraph 5 of subdivision c of subsection 3 of section 33-24-01-05) to measure treatment effectiveness, provided the department determines that an alternative leach testing protocol is appropriate for use, and that the alternative more accurately reflects conditions at the site that affect leaching.

(5) Adjusted standards. The department may adjust the treatment level or method in paragraph 4 to a higher or lower level, based on one or more of the following factors, as appropriate. The adjusted level or method must be protective of human health and the environment:

(a) The technical impracticability of treatment to the levels or by the methods in paragraph 4;

(b) The levels or methods in paragraph 4 would result in concentrations of principal hazardous constituents that are significantly above or below cleanup standards applicable to the site (established either site-specifically, or promulgated under state or federal law);

(c) The views of the affected local community on the treatment levels or methods in paragraph 4 as applied at the site, and, for treatment levels, the treatment methods necessary to achieve these levels;

(d) The short-term risks presented by the onsite treatment method necessary to achieve the levels or treatment methods in paragraph 4;

(e) The long-term protection offered by the engineering design of the corrective action management unit and related engineering controls:

[1] Where the treatment standards in paragraph 4 are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility;

[2] Where cost-effective treatment has been used and the corrective action management unit meets the article 33-24 liner and leachate collection

requirements for new land disposal units at subsection 3 or 4 of section 33-24-05-177;

[3] Where, after review of appropriate treatment technologies, the department determines that cost-effective treatment is not reasonably available, and the corrective action management unit meets the article 33-24 liner and leachate collection requirements for new land disposal units at subsection 3 and 4 of section 33-24-05-177;

[4] Where cost-effective treatment has been used and the principal hazardous constituents in the treated wastes are of very low mobility; or

[5] Where, after review of appropriate treatment technologies, the department determines that cost-effective treatment is not reasonably available, the principal hazardous constituents in the wastes are of very low mobility, and either the corrective action management unit meets or exceeds the liner standards for new, replacement, or laterally expanded corrective action management units in paragraphs 1 and 2 of subdivision c, or the corrective action management unit provides substantially equivalent or greater protection.

(6) The treatment required by the treatment standards must be completed prior to, or within a reasonable time after, placement in the corrective action management unit.

(7) For the purpose of determining whether wastes placed in corrective action management units have met site-specific treatment standards, the department may, as appropriate, specify a subset of the principal hazardous constituents in the waste as analytical surrogates for determining whether treatment standards have been met for other principal hazardous constituents. This specification will be based on the degree of difficulty of treatment and analysis of constituents with similar treatment properties.

e. Except as provided in subsection 6, requirements for ground water monitoring and corrective action that are sufficient to:

(1) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the corrective action management unit;

(2) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the corrective action management unit in which wastes will remain in place after closure of the corrective action management unit; and

(3) Require notification to the department and corrective action as necessary to protect human health and the environment for releases to ground water from the corrective action management unit.

f. Except as provided in subsection 6, closure and postclosure requirements:

(1) Closure of corrective action management units shall:

(a) Minimize the need for further maintenance; and

(b) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, postclosure escape of hazardous waste, hazardous constituents, leachate,

contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

(2) Requirements for closure of corrective action management units shall include the following, as appropriate and as deemed necessary by the department for a given corrective action management unit:

(a) Requirements for excavation, removal, treatment, or containment of wastes; and

(b) Requirements for removal and decontamination of equipment, devices, and structures used in corrective action management unit eligible waste management activities within the corrective action management unit.

(3) In establishing specific closure requirements for corrective action management units under this subsection, the department shall consider the following factors:

(a) Corrective action management unit characteristics;

(b) Volume of wastes which remain in place after closure;

(c) Potential for releases from the corrective action management unit;

(d) Physical and chemical characteristics of the waste;

(e) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and

(f) Potential for exposure of humans and environmental receptors if releases were to occur from the corrective action management unit.

(4) Cap requirements:

(a) At final closure of the corrective action management unit, for areas in which wastes will remain after closure of the corrective action management unit, with constituent concentrations at or above remedial levels or goals applicable to the site, the owner or operator must cover the corrective action management unit with a final cover designed and constructed to meet the following performance criteria, except as provided in subparagraph b:

[1] Provide long-term minimization of migration of liquids through the closed unit;

[2] Function with minimum maintenance;

[3] Promote drainage and minimize erosion or abrasion of the cover;

[4] Accommodate settling and subsidence so that the cover's integrity is maintained; and

[5] Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(b) The department may determine that modifications to subparagraph a are needed to facilitate treatment or the performance of the corrective action management unit (for example, to promote biodegradation).

(5) Postclosure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

6. Corrective action management units used for storage or treatment, or both, only are corrective action management units in which wastes will not remain after closure. Such corrective action management units must be designated in accordance with all of the requirements of this section, except as follows:

   a. Corrective action management units that are used for storage or treatment, or both, only and that operate in accordance with the time limits established in the staging pile regulations at paragraph 3 of subdivision a of subsection 4, subsection 8 and subsection 9 of section 33-24-05-554 are subject to the requirements for staging piles at paragraphs 1 and 2 of subdivision a of subsection 4, subdivision b of subsection 4, subsections 5, 6, 10, and 11 of section 33-24-05-554 in lieu of the performance standards and requirements for corrective action management units contained in subsection 3 and subdivisions c through f of subsection 5.

   b. Corrective action management units that are used for storage or treatment, or both, only and that do not operate in accordance with the time limits established in the staging pile regulations at paragraph 3 of subdivision a of subsection 4, subsections 8 and 9 of section 33-24-05-554:

      (1) Must operate in accordance with a time limit, established by the department, that is no longer than necessary to achieve a timely remedy selected for the waste; and

      (2) Are subject to the requirements for staging piles at paragraphs 1 and 2 of subdivision a of subsection 4, subdivision b of subsection 4, and subsections 5, 6, 10, and 11 of section 33-24-05-554 in lieu of the performance standards and requirements for corrective action management units contained in subsection 3 and subdivisions d through f of subsection 5.

7. Corrective action management units into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at paragraph 1 of subdivision c of subsection 5, caps at paragraph 4 of subdivision f of subsection 5, ground water monitoring requirements at subdivision e of subsection 5 or, for treatment or storage, or both, only corrective action management units, the design standards at subsection 6.

8. The department shall provide public notice and a reasonable opportunity for public comment before designating a corrective action management unit. Such notice shall include the rationale for any proposed adjustments under paragraph 5 of subdivision d of subsection 5 to the treatment standards in paragraph 4 of subdivision d of subsection 5.

9. Notwithstanding any other provision of this section, the department may impose additional requirements as necessary to protect human health and the environment.

10. Incorporation of a corrective action management unit into an existing permit must be approved by the department according to the procedures for department-initiated permit modifications under section 33-24-06-12, or according to the permit modification procedures of section 33-24-06-14.

11. The designation of a corrective action management unit does not change the department's existing authority to address cleanup levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

History: Effective January 1, 1994; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-553. Temporary units (TU).

1. For temporary tanks and container storage areas used to treat or store hazardous remediation wastes during remedial activities required under section 33-24-05-58 or Resource Conservation and Recovery Act section 3008(h), or at a permitted facility that is not subject to section 33-24-05-58, the department may designate a unit at the facility, as a temporary unit. A temporary unit must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the temporary unit originated. For temporary units, the department may replace the design, operating, or closure standard applicable to these units under sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819, or the applicable requirements of subsection 5 of section 33-24-06-16, with alternative requirements which protect human health and the environment.

2. Any temporary unit to which alternative requirements are applied in accordance with subsection 1 must be:

   a. Located within the facility boundary; and

   b. Used only for treatment or storage of remediation wastes.

3. In establishing standards to be applied to a temporary unit, the department shall consider the following factors:

   a. Length of time such unit will be in operation;

   b. Type of unit;

   c. Volumes of wastes to be managed;

   d. Physical and chemical characteristics of the wastes to be managed in the unit;

   e. Potential for releases from the unit;

   f. Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and

   g. Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

4. The department shall specify in the permit or order the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The department shall also specify the design, operating, and closure requirements for the unit.

5. The department may extend the operational period of a temporary unit once for no longer than a period of one year beyond that originally specified in the permit or order, if the department determines that:

   a. Continued operation of the unit will not pose a threat to human health and the environment; and

b. Continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

6. Incorporation of a temporary unit or a time extension for a temporary unit into an existing permit must be:

   a. Approved in accordance with the procedures for department-initiated permit modifications under section 33-24-06-12; or

   b. Requested by the owner or operator as a class II modification according to the procedures under section 33-24-06-14.

7. The department shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and shall make such documentation available to the public.

History: Effective January 1, 1994; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-554. Staging piles.

1. A staging pile is an accumulation of solid, nonflowing remediation waste (as defined in section 33-24-01-04) that is not a containment building and is used only during remedial operations for temporary storage at a facility. A staging pile must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the staging pile originated. Staging piles must be designated by the department according to the requirements in this section.

   a. For the purposes of this section, storage includes mixing, sizing, blending, or other similar physical operations as long as they are intended to prepare the wastes for subsequent management or treatment.

   b. [Reserved]

2. A staging pile may be used to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) only if the owner or operator follows the standards and design criteria the department has designated for that staging pile. The department must designate the staging pile in a permit or, at an interim status facility, in a closure plan or order (consistent with the applicable requirements of subsection 5 of section 33-24-06-16). The department must establish conditions in the permit, closure plan, or order that comply with subsections 4 through 11.

3. An owner or operator that is seeking a staging pile designation must provide the following information:

   a. Sufficient and accurate information to enable the department to impose standards and design criteria for the staging pile according to subsections 4 through 11;

   b. Certification by a qualified professional engineer for technical data, such as design drawings and specifications, and engineering studies, unless the department determines, based on information that the owner or operator provided, that this certification is not necessary to ensure that a staging pile will protect human health and the environment; and

   c. Any additional information the department determines is necessary to protect human health and the environment.

4. Performance criteria for a staging pile. The department must establish the standards and design criteria for the staging pile in the permit, closure plan, or order.

   a. The standards and design criteria as established by the department in the permit closure plan or order must comply with the following:

      (1) The staging pile must facilitate a reliable, effective, and protective remedy;

      (2) The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, and runoff and run-on controls, as appropriate); and

      (3) The staging pile may not operate for a period of more than two years, except when the department grants an operating term extension under subsection 9. The owner or operator must measure the two-year limit, or other operating term specified by the department in the permit, closure plan, or order, from the first time remediation waste is placed into a staging pile. The owner or operator must maintain a record of the date when remediation waste is first placed into the staging pile for the life of the permit, closure plan, or order, or for three years, whichever is longer.

   b. In setting the standards and design criteria, the department must consider the following factors:

      (1) Length of time the staging pile will be in operation;

      (2) Volumes of wastes the owner or operator intends to store in the staging pile;

      (3) Physical and chemical characteristics of the wastes to be stored in the unit;

      (4) Potential for releases from the unit;

      (5) Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and

      (6) Potential for human and environmental exposure to potential releases from the unit.

5. Ignitable or reactive remediation waste are prohibited from being placed in a staging pile. The owner or operator must not place ignitable or reactive remediation waste in a staging pile unless:

   a. The owner or operator has treated, rendered, or mixed the remediation waste before being placed in the staging pile so that:

      (1) The remediation waste no longer meets the definition of ignitable or reactive under section 33-24-02-11 or 33-24-02-13; and

      (2) The owner or operator has complied with subsection 2 of section 33-24-05-08; or

   b. The owner or operator manages the remediation waste to protect it from exposure to any material or condition that may cause it to ignite or react.

6. Management of incompatible remediation wastes in a staging pile. The owner or operator must comply with the following requirements for incompatible wastes (as defined in section 33-24-01-04) in staging piles:

a. The owner or operator may not place incompatible remediation wastes in the same staging pile unless the owner or operator has complied with subsection 2 of section 33-24-05-08;

b. If remediation waste in a staging pile is incompatible with any waste or material stored nearby in containers, other piles, open tanks, or land disposal units (for example, surface impoundments), the owner or operator must separate the incompatible materials, or protect them from one another by using a dike, berm, wall, or other device; and

c. The owner or operator must not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with subsection 2 of section 33-24-05-08.

7. Land disposal restrictions and minimum technological requirements are not triggered by placing hazardous remediation wastes into a staging pile.

8. Staging pile operation time limits. The department may allow a staging pile to operate for up to two years after hazardous remediation waste is first placed into the pile. The owner or operator may use a staging pile no longer than the length of time designated by the department in the permit, closure plan, or order except as provided in subsection 9.

9. Extension of operation time limits.

a. The department may grant one operating term extension of up to one hundred eighty days beyond the operating term limit contained in the permit, closure plan, or order (see subsection 12 for modification procedures). To justify to the department the need for an extension, the owner or operator must provide sufficient and accurate information to enable the department to determine that continued operation of the staging pile:

(1) Will not pose a threat to human health and the environment; and

(2) Is necessary to ensure timely and efficient implementation of remedial actions at the facility.

b. The department may, as a condition of the extension, specify further standards and design criteria in the permit, closure plan, or order, as necessary, to ensure protection of human health and the environment.

10. Closure requirements for a staging pile located in a previously contaminated area.

a. Within one hundred eighty days after the operating term of the staging pile expires, the owner or operator must close a staging pile located in a previously contaminated area of the site by removing or decontaminating all:

(1) Remediation waste;

(2) Contaminated containment system components; and

(3) Structures and equipment contaminated with waste and leachate.

b. The owner or operator must also decontaminate contaminated subsoils in a manner and according to a schedule that the department determines will protect human health and the environment.

c. The department must include the above requirements in the permit, closure plan, or order in which the staging pile is designated.

11. Closure requirements for a staging pile located in an uncontaminated area.

a. Within one hundred eighty days after the operating term of the staging pile expires, the owner or operator must close a staging pile located in an uncontaminated area of the site according to subsection 1 of section 33-24-05-135 and section 33-24-05-60.

b. The department must include the above requirements in the permit, closure plan, or order in which the staging pile is designated.

12. Modifications to an existing permit, closure plan, or order to allow use of a staging pile.

a. A permit, other than a remedial action plan, may be modified to incorporate a staging pile or staging pile operating term extension, by either:

(1) The department may initiate the modification in accordance with section 33-24-06-12; or

(2) The owner or operator may request a class 2 modification under section 33-24-06-14.

b. A remedial action plan may be modified to incorporate a staging pile or staging pile operating term extension when the owner or operator submits a request pursuant to subsections 1 and 2 of section 33-24-06-33.

c. The owner or operator must follow the applicable requirements under subsection 3 of section 33-24-05-61 to modify a closure plan to incorporate a staging pile or staging pile operating term extension.

d. To modify an order to incorporate a staging pile or staging pile operating term extension, the owner or operator must follow the terms of the order and the applicable requirements of subsection 5 of section 33-24-06-16.

13. The department shall document the rationale for designating a staging pile or staging pile operating term extension and shall make such documentation available to the public.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-555. Disposal of corrective action management unit-eligible wastes in permitted hazardous waste landfills.

1. The department may approve placement of corrective action management unit-eligible wastes in hazardous waste landfills not located at the site from which the waste originated, without the wastes meeting the requirements of sections 33-24-05-250 through 33-24-05-299, if the conditions in subdivisions a through c are met:

a. The waste meets the definition of corrective action management unit-eligible waste in subdivisions a and b of subsection 1 of section 33-24-05-552.

b. The department identifies principal hazardous constituents in such waste, in accordance with paragraphs 1 and 2 of subdivision d of subsection 5 of section 33-24-05-552, and requires that such principal hazardous constituents are treated to any of the following standards specified for corrective action management unit-eligible wastes:

(1) The treatment standards under paragraph 4 of subdivision d of subsection 5 of section 33-24-05-552; or

(2) Treatment standards adjusted in accordance with subparagraphs a, c, d, or item 1 of subparagraph e of paragraph 5 of subdivision d of subsection 5 of section 33-24-05-552; or

(3) Treatment standards adjusted in accordance with item 2 of subparagraph e of paragraph 5 of subdivision d of subsection 5 of section 33-24-05-552, where treatment has been used and that treatment significantly reduces the toxicity or mobility of the principal hazardous constituents in the waste. For minimizing the short-term and long-term threat posed by the waste, including the threat at the remediation site.

c. The landfill receiving the corrective action management unit-eligible waste must have a hazardous waste permit, meet the requirements for new landfills in sections 33-24-05-176 through 33-24-05-190, and be authorized to accept corrective action management unit-eligible wastes. For the purposes of this requirement, "permit" does not include interim status.

2. The person seeking approval shall provide sufficient information to enable the department with regulatory oversight at the location where the cleanup is taking place to approve placement of corrective action management unit-eligible waste in accordance with subsection 1. Information required by subdivisions a through c of subsection 4 of section 33-24-05-552 for corrective action management unit applications must be provided, unless not reasonably available.

3. The department shall provide public notice and a reasonable opportunity for public comment before approving corrective action management unit-eligible waste for placement in an offsite permitted hazardous waste landfill, consistent with the requirements for corrective action management unit approval at subsection 8 of section 33-24-05-552. The approval must be specific to a single remediation.

4. Applicable hazardous waste management requirements in sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819, including recordkeeping requirements to demonstrate compliance with treatment standards approved under this section, for corrective action management unit-eligible waste must be incorporated into the receiving facility permit through permit issuance or a permit modification, providing notice and an opportunity for comment and a hearing. Notwithstanding subsection 1 of section 33-24-06-10, a landfill may not receive hazardous corrective action management unit-eligible waste under this section unless its permit specifically authorizes receipt of such waste.

5. For each remediation, corrective action management unit-eligible waste may not be placed in an offsite landfill authorized to receive corrective action management unit-eligible waste in accordance with subsection 4 until the following additional conditions have been met:

a. The landfill owner or operator notifies the department and other regulatory agency responsible for oversight of the landfill and persons on the facility mailing list, maintained in accordance with paragraph 4 of subdivision a of subsection 3 of section 33-24-07-06, of the owner's or operator's intent to receive corrective action management unit-eligible waste in accordance with this section; the notice must identify the source of the remediation waste, the principal hazardous constituents in the waste, and treatment requirements.

b. Persons on the facility mailing list may provide comments, including objections to the receipt of the corrective action management unit-eligible waste, to the department within fifteen calendar days of notification.

c. The department may object to the placement of the corrective action management unit-eligible waste in the landfill within thirty calendar days of notification; the department may extend the review period an additional thirty calendar days because of public concerns or insufficient information.

d. Corrective action management unit-eligible wastes may not be placed in the landfill until the department has notified the facility owner or operator that the department does not object to its placement.

e. If the department objects to the placement or does not notify the facility owner or operator that the department has chosen not to object, the facility may not receive the waste, notwithstanding subsection 1 of section 33-24-06-10, until the objection has been resolved, or the owner or operator obtains a permit modification in accordance with the procedures of section 33-24-06-14 specifically authorizing receipt of the waste.

f. As part of the permit issuance or permit modification process of subsection 4, the department may modify, reduce, or eliminate the notification requirements of this subsection as they apply to specific categories of corrective action management unit-eligible waste, based on minimal risk.

6. Generators of corrective action management unit-eligible wastes sent offsite to a hazardous waste landfill under this section must comply with the requirements of subdivision d of subsection 1 of section 33-24-05-256; offsite facilities treating corrective action management unit-eligible wastes to comply with this section must comply with the requirements of subdivision d of subsection 2 of section 33-24-05-256, except that the certification must be with respect to the treatment requirements of subdivision b of subsection 1.

7. For the purposes of this section only, the "design of the corrective action management unit" in subparagraph e of paragraph 5 of subdivision d of subsection 5 of section 33-24-05-552 means design of the permitted hazardous waste landfill.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-556. [Reserved]

33-24-05-557. [Reserved]

33-24-05-558. [Reserved]

33-24-05-559. [Reserved]

33-24-05-560. [Reserved]

33-24-05-561. [Reserved]

33-24-05-562. [Reserved]

33-24-05-563. [Reserved]

33-24-05-564. [Reserved]

33-24-05-565. [Reserved]

33-24-05-566. [Reserved]

33-24-05-567. [Reserved]

33-24-05-568. [Reserved]

33-24-05-569. [Reserved]

33-24-05-570. [Reserved]

33-24-05-571. [Reserved]

33-24-05-572. [Reserved]

33-24-05-573. [Reserved]

33-24-05-574. [Reserved]

33-24-05-575. [Reserved]

33-24-05-576. [Reserved]

33-24-05-577. [Reserved]

33-24-05-578. [Reserved]

33-24-05-579. [Reserved]

33-24-05-580. [Reserved]

33-24-05-581. [Reserved]

33-24-05-582. [Reserved]

33-24-05-583. [Reserved]

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33-24-05-585. [Reserved]

33-24-05-586. [Reserved]

33-24-05-587. [Reserved]

33-24-05-588. [Reserved]

33-24-05-589. [Reserved]

33-24-05-590. [Reserved]

33-24-05-591. [Reserved]

33-24-05-592. [Reserved]

33-24-05-593. [Reserved]

33-24-05-594. [Reserved]

33-24-05-595. [Reserved]

33-24-05-596. [Reserved]

33-24-05-597. [Reserved]

33-24-05-598. [Reserved]

33-24-05-599. [Reserved]

33-24-05-600. Definitions for the management of used oil.

Terms that are defined in sections 33-24-01-04, 33-24-02-01, and chapter 33-24-08 have the same meanings when used in sections 33-24-05-600 through 33-24-05-689.

1. "Aboveground tank" means a tank used to store or process used oil that is not an underground storage tank as defined in chapter 33-24-08.

2. "Container" means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

3. "Do-it-yourselfer used oil collection center" means any site or facility that accepts or aggregates and stores used oil collected only from household do-it-yourselfers.

4. "Existing tank" means a tank that is used for the storage or processing of used oil and that is in operation, or for which installation has commenced on or prior to the effective date of the authorized used oil program for the state in which the tank is located. Installation will be

considered to have commenced if the owner or operator has obtained all federal, state, and local approvals or permits necessary to begin installation of the tank and if either:

a. A continuous onsite installation program has begun; or

b. The owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for installation of the tank to be completed within a reasonable time.

5. "Household do-it-yourselfer used oil" means oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal vehicles.

6. "Household do-it-yourselfer used oil generator" means an individual who generates household do-it-yourselfer used oil.

7. "New tank" means a tank that will be used to store or process used oil and for which installation has commenced after the effective date of the authorized used oil program for the state in which the tank is located.

8. "Petroleum refining facility" means an establishment primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionation, straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes, for example, facilities classified as standard industrial code 2911.

9. "Processing" means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of, fuel oils, lubricants, or other used oil-derived product. Processing includes, but is not limited to blending used oil with virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation, and re-refining.

10. "Re-refining distillation bottoms" means the heavy fraction produced by vacuum distillation of filtered and dehydrated used oil. The composition of still bottoms varies with column operation and feedstock.

11. "Tank" means any stationary device, designed to contain an accumulation of used oil which is constructed primarily of nonearthen materials, (for example, wood, concrete, steel, plastic) which provides structural support.

12. "Used oil" means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

13. "Used oil aggregation point" means any site or facility that accepts, aggregates, or stores, or any combination, used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than fifty-five gallons. Used oil aggregation points may also accept used oil from household do-it-yourselfers.

14. "Used oil burner" means a facility where used oil not meeting the specification requirements in section 33-24-05-611 is burned for energy recovery in devices identified in subsection 1 of section 33-24-05-661.

15. "Used oil collection center" means any site or facility that is registered, licensed and permitted, and recognized by a state, county, or municipal government to manage used oil and accepts, aggregates, and stores used oil collected from used oil generators regulated under sections 33-24-05-620 through 33-24-05-629 who bring used oil to the collection center in shipments of

no more than fifty-five gallons [208.20 liters] under the provisions of section 33-24-05-624. Used oil collection centers may also accept used oil from household do-it-yourselfers.

16. "Used oil fuel marketer" means any person who conducts either of the following activities:

    a. Directs a shipment of off-specification used oil from their facility to a used oil burner; or

    b. First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in section 33-24-05-611.

17. "Used oil generator" means any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

18. "Used oil processor" means a facility that processes used oil and includes used oil re-refiners.

19. "Used oil transfer facility" means any transportation-related facility including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than twenty-four hours and not longer than thirty-five days during the normal course of transportation or prior to an activity performed pursuant to subdivision b of subsection 2 of section 33-24-05-620. Transfer facilities that store used oil for more than thirty-five days are subject to regulation under sections 33-24-05-650 through 33-24-05-659.

20. "Used oil transporter" means any person who transports used oil, any person who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation but, with the following exception, may not process used oil. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (for example, settling and water separation), but that are not designed to produce (or make more amenable for production of) used oil derived products or used oil fuel.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-601. [Reserved]

33-24-05-602. [Reserved]

33-24-05-603. [Reserved]

33-24-05-604. [Reserved]

33-24-05-605. [Reserved]

33-24-05-606. [Reserved]

33-24-05-607. [Reserved]

33-24-05-608. [Reserved]

33-24-05-609. [Reserved]

33-24-05-610. Applicability of used oil standards.

This section identifies those materials that are subject to regulation as used oil under sections 33-24-05-600 through 33-24-05-689. This section also identifies some materials that are not subject to regulation as used oil under sections 33-24-05-600 through 33-24-05-689, and indicates whether these materials may be subject to regulation as hazardous waste under article 33-24.

1. **Used oil.** The department presumes that used oil is to be recycled unless a used oil handler disposes of used oil or sends used oil for disposal. Except as provided in section 33-24-05-611, the regulations of sections 33-24-05-600 through 33-24-05-689 apply to used oil, and to materials identified in this section as being subject to regulation as used oil, whether or not the used oil or material exhibits any characteristics of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14.

2. **Mixtures of used oil and hazardous waste.**

   a. Listed hazardous waste.

      (1) Mixtures of used oil and hazardous waste that is listed in sections 33-24-02-15 through 33-24-02-19 are subject to regulation as hazardous waste under chapters 33-24-01 through 33-24-04, chapters 33-24-06 and 33-24-07, and sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-929, rather than as used oil under sections 33-24-05-600 through 33-24-05-689.

      (2) Rebuttable presumption for used oil. Used oil containing greater than or equal to one thousand parts per million total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in sections 33-24-02-15 through 33-24-02-19. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix V of chapter 33-24-02).

         (a) The rebuttable presumption does not apply to metalworking oils or fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in subsection 3 of section 33-24-05-624, to reclaim metalworking oils or fluids. The presumption does apply to metalworking oils or fluids if such oils or fluids are recycled in any other manner, or disposed.

         (b) The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons removed from refrigeration units where the chlorofluorocarbons are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with chlorofluorocarbons that have been mixed with used oil from sources other than refrigeration units.

   b. Characteristic hazardous waste. Mixtures of used oil and hazardous waste that solely exhibit one or more of the hazardous waste characteristics identified in sections 33-24-02-10 through 33-24-02-14 and mixtures of used oil and hazardous waste that is listed in sections 33-24-02-15 through 33-24-02-19 solely because it exhibits one or more of the characteristics of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14 are subject to:

      (1) Except as provided in paragraph 3, regulation as hazardous waste under chapters 33-24-01 through 33-24-04, chapters 33-24-06 and 33-24-07, and sections 33-24-05-01 through 33-24-05-559 and 33-24-05-800 through 33-24-05-929, rather than as used oil under sections 33-24-05-600 through 33-24-05-689, if the resultant

mixture exhibits any characteristics of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14; or

(2) Except as specified in paragraph 3, regulation as used oil under sections 33-24-05-600 through 33-24-05-689, if the resultant mixture does not exhibit any characteristics of hazardous waste identified under sections 33-24-02-10 through 33-24-02-14.

(3) Regulation as used oil under sections 33-24-05-600 through 33-24-05-689, if the mixture is of used oil and a waste which is hazardous solely because it exhibits the characteristic of ignitability, for example, ignitable-only mineral spirits, provided that the resultant mixture does not exhibit the characteristic of ignitability under section 33-24-02-11.

c. Conditionally exempt small quantity generator hazardous waste. Mixtures of used oil and conditionally exempt small quantity generator hazardous waste regulated under section 33-24-02-05 are subject to regulation as used oil under sections 33-24-05-600 through 33-24-05-689.

3. **Materials containing or otherwise contaminated with used oil.**

a. Except as provided in subdivision b, materials containing or otherwise contaminated with used oil from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material:

(1) Are not used oil and thus not subject to sections 33-24-05-600 through 33-24-05-689, and

(2) If applicable are subject to the hazardous waste regulations of chapters 33-24-01 through 33-24-04, chapters 33-24-06 and 33-24-07, and sections 33-24-05-01 through 33-24-05-559 and 33-24-05-800 through 33-24-05-929.

b. Materials containing or otherwise contaminated with used oil that are burned for energy recovery are subject to regulation as used oil under sections 33-24-05-600 through 33-24-05-689.

c. Used oil drained or removed from materials containing or otherwise contaminated with used oil is subject to regulation as used oil under sections 33-24-05-600 through 33-24-05-689.

4. **Mixtures of used oil with products.**

a. Except as provided in subdivision b, mixtures of used oil and fuels or other fuel products are subject to regulation as used oil under sections 33-24-05-600 through 33-24-05-689.

b. Mixtures of used oil and diesel fuel mixed onsite by the generator of the used oil for use in the generator's own vehicles are not subject to sections 33-24-05-600 through 33-24-05-689 once the used oil and diesel fuel have been mixed. Prior to mixing, the used oil is subject to the requirements of sections 33-24-05-620 through 33-24-05-629.

5. **Materials derived from used oil.**

a. Materials that are reclaimed from used oil that are used beneficially and are not burned for energy recovery or used in a manner constituting disposal (for example, re-refined lubricants) are:

(1) Not used oil and thus are not subject to sections 33-24-05-600 through 33-24-05-689; and

(2) Not solid wastes and are thus not subject to the hazardous waste regulations of chapters 33-24-01 through 33-24-04, chapters 33-24-06 and 33-24-07, and sections 33-24-05-01 through 33-24-05-559 and 33-24-05-800 through 33-24-05-929 as provided in paragraph a of subdivision b of subsection 3 of section 33-24-02-03.

b. Materials produced from used oil that are burned for energy recovery (for example, used oil fuels) are subject to regulation as used oil under sections 33-24-05-600 through 33-24-05-689.

c. Except as provided in subdivision d, materials derived from used oil that are disposed of or used in a manner constituting disposal are:

(1) Not used oil and thus are not subject to sections 33-24-05-600 through 33-24-05-689; and

(2) Are solid wastes and thus are subject to the hazardous waste regulations of chapters 33-24-01 through 33-24-04, chapters 33-24-06 and 33-24-07, and sections 33-24-05-01 through 33-24-05-559 and 33-24-05-800 through 33-24-05-929 if the materials are listed or identified as hazardous wastes.

d. Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products are not subject to sections 33-24-05-600 through 33-24-05-689.

6. **Wastewater.** Wastewater, the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewaters at facilities which have eliminated the discharge of wastewater), contaminated with de minimis quantities of used oil are not subject to the requirements of sections 33-24-05-600 through 33-24-05-689. For purposes of this subsection, de minimis quantities of used oils are defined as small spills, leaks, or drippings from pumps, machinery, pipes, and other similar equipment during normal operations or small amounts of oil lost to the wastewater treatment system during washing or draining operations. This exception will not apply if the used oil is discarded as a result of abnormal manufacturing operations resulting in substantial leaks, spills, or other releases, or to used oil recovered from wastewaters.

7. **Used oil introduced into crude oil pipelines or a petroleum refining facility**.

a. Used oil mixed with crude oil or natural gas liquids (for example, in a production separator or crude oil stock tank) for insertion into a crude oil pipeline is exempt from the requirements of sections 33-24-05-600 through 33-24-05-689. The used oil is subject to the requirements of sections 33-24-05-600 through 33-24-05-689 prior to the mixing of used oil with crude oil or natural gas liquids.

b. Mixtures of used oil and crude oil or natural gas liquids containing less than one percent used oil that are being stored or transported to a crude oil pipeline or petroleum refining facility for insertion in the refining process at a point prior to crude distillation or catalytic cracking are exempt from the requirements of sections 33-24-05-600 through 33-24-05-689.

c. Used oil that is inserted into the petroleum refining facility process before crude distillation or catalytic cracking without prior mixing with crude oil is exempt from the requirements of sections 33-24-05-600 through 33-24-05-689 provided that the used oil constitutes less than one percent of the crude oil feed to any petroleum refining facility process unit at any given time. Prior to insertion in the petroleum refining facility process,

the used oil is subject to the requirements of sections 33-24-05-600 through 33-24-05-689.

d. Except as provided in subdivision e, used oil that is introduced into a petroleum refining facility process after crude distillation or catalytic cracking is exempt from the requirements of sections 33-24-05-600 through 33-24-05-689 only if the used oil meets the specification of section 33-24-05-611. Prior to insertion in the petroleum refining facility process, the used oil is subject to the requirements of sections 33-24-05-600 through 33-24-05-689.

e. Used oil that is incidentally captured by a hydrocarbon recovery system or wastewater treatment system as part of routine process operations at a petroleum refining facility and inserted into the petroleum refining facility process is exempt from the requirements of sections 33-24-05-600 through 33-24-05-689. This exemption does not extend to used oil which is intentionally introduced into a hydrocarbon recovery system (for example, by pouring collected used oil into the wastewater treatment system).

f. Tank bottoms from stock tanks containing exempt mixtures of used oil and crude oil or natural gas liquids are exempt from the requirements of sections 33-24-05-600 through 33-24-05-689.

8. **Used oil on vessels.** Used oil produced on vessels from normal shipboard operations is not subject to sections 33-24-05-600 through 33-24-05-689 until it is transported ashore.

9. **Used oil containing polychlorinated biphenyls.** Used oil containing polychlorinated biphenyls (as defined at 40 CFR 761.3) at any concentration less than fifty parts per million is subject to the requirements of sections 33-24-05-600 through 33-24-05-689 unless, because of dilution, it is regulated under 40 CFR part 761 as a used oil containing polychlorinated biphenyls at fifty parts per million or greater. Polychlorinated biphenyl-containing used oil subject to the requirements of sections 33-24-05-600 through 33-24-05-689 may also be subject to the prohibitions and requirements found at 40 CFR part 761, including section 761.20(d) and (e). Used oil containing polychlorinated biphenyls at concentrations of fifty parts per million or greater is not subject to the requirements of sections 33-24-05-600 through 33-24-05-689, but is subject to regulations under 40 CFR part 761. No person may avoid these provisions by diluting used oil containing polychlorinated biphenyls, unless otherwise specifically provided for in sections 33-24-05-600 through 33-24-05-689 or 40 CFR part 761.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-611. Used oil specifications.

Used oil burned for energy recovery, and any fuel produced from used oil by processing, blending, or other treatment, is subject to regulation under sections 33-24-05-600 through 33-24-05-689 unless it is shown not to exceed any of the allowable levels of the constituents and properties shown in table 1. Once used oil that is to be burned for energy recovery has been shown not to exceed any allowable level and the person making that showing complies with sections 33-24-05-672, 33-24-05-673, and subsection 2 of section 33-24-05-674, the used oil is no longer subject to sections 33-24-05-600 through 33-24-05-689.

Table 1. Used Oil Not Exceeding Any Allowable Level Shown Below Is Not Subject to Sections 33-24-05-600 Through 33-24-05-689 When Burned for Energy Recovery[1]

Constituent/Property	Allowable Level

Arsenic	5 ppm maximum.
Cadmium	2 ppm maximum.
Chromium	10 ppm maximum.
Lead	100 ppm maximum.
Flash Point	100 ºF minimum.
Total Halogens	4,000 ppm maximum.[2]

Note: Applicable standards for the burning of used oil containing polychlorinated biphenyls are imposed by 40 CFR 761.20(e).

FOOTNOTE: [1]The allowable levels do not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see subsection 2 of section 33-24-05-610).

FOOTNOTE: [2]Used oil containing greater than or equal to one thousand parts per million total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under subdivision a of subsection 2 of section 33-24-05-610. Such used oil is subject to sections 33-24-05-525 through 33-24-05-549 rather than sections 33-24-05-600 through 33-24-05-689 when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

History: Effective January 1, 1994; amended effective July 1, 1997; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-612. Prohibitions.

1. **Surface impoundment prohibition.** Used oil shall not be managed in surface impoundments or waste piles unless the units are subject to regulation under sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, 33-24-05-800 through 33-24-05-819, or the applicable requirements of subsection 5 of section 33-24-06-16.

2. **Use as a dust suppressant.** The use of used oil as a dust suppressant is prohibited.

3. **Burning in particular units.** Off-specification used oil fuel may be burned for energy recovery in only the following devices:

   a. Industrial furnaces identified in section 33-24-01-04;

   b. Boilers, as defined in section 33-24-01-04, that are identified as follows:

      (1) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes;

      (2) Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale; or

      (3) Used oil-fired space heaters provided that the burner meets the provisions of section 33-24-05-623.

   c. Hazardous waste incinerators subject to regulation under sections 33-24-05-144 through 33-24-05-159 or the applicable requirements of subsection 5 of section 33-24-06-16.

History: Effective January 1, 1994; amended effective December 1, 2003; January 1, 2016.

General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-613. [Reserved]

33-24-05-614. [Reserved]

33-24-05-615. [Reserved]

33-24-05-616. [Reserved]

33-24-05-617. [Reserved]

33-24-05-618. [Reserved]

33-24-05-619. [Reserved]

33-24-05-620. Applicability of standards for used oil generators.

1. **General.** Except as provided in subdivisions a through d, sections 33-24-05-620 through 33-24-05-629 applies to all used oil generators. A used oil generator is any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

   a. Household do-it-yourselfer used oil generators. Household do-it-yourselfer used oil generators are not subject to regulation under sections 33-24-05-620 through 33-24-05-629.

   b. Vessels. Vessels at sea or at port are not subject to sections 33-24-05-620 through 33-24-05-629. For purposes of sections 33-24-05-620 through 33-24-05-629, used oil produced on vessels from normal shipboard operations is considered to be generated at the time it is transported ashore. The owner or operator of the vessel and the persons removing or accepting used oil from the vessel are co-generators of the used oil and are both responsible for managing the waste in compliance with sections 33-24-05-620 through 33-24-05-629 once the used oil is transported ashore. The co-generators may decide among them which party will fulfill the requirements of sections 33-24-05-620 through 33-24-05-629.

   c. Diesel fuel. Mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator's own vehicles are not subject to sections 33-24-05-660 through 33-24-05-689 once the used oil and diesel fuel have been mixed. Prior to mixing, the used oil fuel is subject to the requirements of sections 33-24-05-620 through 33-24-05-629.

   d. Farmers. Farmers who generate an average of twenty-five gallons [94.64 liters] per month or less of used oil from vehicles or machinery used on the farm in a calendar year are not subject to the requirements of sections 33-24-05-600 through 33-24-05-689.

2. **Other applicable provisions.** Used oil generators who conduct the following activities are subject to the requirements of other applicable provisions of sections 33-24-05-600 through 33-24-05-689 as indicated in subdivisions a through e:

a. Generators who transport used oil, except under the self-transport provisions of subsections 1 and 2 of section 33-24-05-624, must also comply with sections 33-24-05-640 through 33-24-05-649.

b. Generators who process used oil must also comply with sections 33-24-05-650 through 33-24-05-659.

(1) Except as provided in paragraph 2, generators who process or re-refine used oil must also comply with sections 33-24-05-650 through 33-24-05-659.

(2) Generators who perform the following activities are not processors provided that the used oil is generated onsite and is not being sent offsite to a burner of on-specification or off-specification used oil fuel.

(a) Filtering, cleaning, or otherwise reconditioning used oil before returning it for reuse by the generator;

(b) Separating used oil from wastewater generated onsite to make the wastewater acceptable for discharge or reuse pursuant to section 402 or section 307(b) of the Clean Water Act or other applicable federal or state regulations governing the management of discharge of wastewaters;

(c) Using oil mist collectors to remove small droplets of used oil from in-plant air to make plant air suitable for continued recirculation;

(d) Draining or otherwise removing used oil from materials containing or otherwise contaminated with used oil in order to remove excessive oil to the extent possible pursuant to subsection 3 of section 33-24-05-610; or

(e) Filtering, cleaning, or otherwise reconditioning used oil before burning it in a space heater pursuant to section 33-24-05-623.

c. Generators who burn off-specification used oil for energy recovery, except under the onsite space heater provisions of section 33-24-05-623, must also comply with sections 33-24-05-660 through 33-24-05-669.

d. Generators who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in section 33-24-05-611 must also comply with sections 33-24-05-670 through 33-24-05-679.

e. Generators who dispose of used oil must also comply with sections 33-24-05-680 through 33-24-05-689.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-621. Hazardous waste mixing.

1. Mixtures of used oil and hazardous waste must be managed in accordance with subsection 2 of section 33-24-05-610.

2. The rebuttable presumption for used oil of paragraph 2 of subdivision a of subsection 2 of section 33-24-05-610 applies to used oil managed by generators. Under the rebuttable presumption for used oil of paragraph 2 of subdivision a of subsection 2 of section

33-24-05-610, used oil containing greater than or equal to one thousand parts per million total halogens is presumed to be a hazardous waste and thus must be managed as hazardous waste and not as used oil unless the presumption is rebutted. However, the rebuttable presumption does not apply to certain metalworking oils or fluids and certain used oils removed from refrigeration units.

History: Effective January 1, 1994; amended effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-622. Used oil storage.

Used oil generators are subject to all applicable spill prevention, control, and countermeasures [40 CFR part 112] in addition to the requirements of sections 33-24-05-620 through 33-24-05-629. Used oil generators are also subject to the underground storage tank (chapter 33-24-08) standards for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of sections 33-24-05-620 through 33-24-05-629.

1. **Storage units.** Used oil generators shall not store used oil in units other than tanks, containers, or units subject to regulation under sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, 33-24-05-800 through 33-24-05-819, or the applicable requirements of subsection 5 of section 33-24-06-16.

2. **Condition of units.** Containers and aboveground tanks used to store used oil at generator facilities must be:

   a. In good condition (no severe rusting, apparent structural defects, or deterioration); and

   b. Not leaking (no visible leaks).

3. **Labels.**

   a. Containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil".

   b. Fill pipes used to transfer used oil into underground storage tanks at generator facilities must be labeled or marked clearly with the words "Used Oil".

4. **Response to releases.** Upon detection of a release of used oil to the environment not subject to the requirements of chapter 33-24-08, sections 33-24-08-50 through 33-24-08-59, a generator must perform the following cleanup steps:

   a. Stop the release;

   b. Contain the released used oil;

   c. Clean up and manage properly the released used oil and other materials; and

   d. If necessary to prevent future releases, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-623. Onsite burning in space heaters.

Generators may burn used oil in used oil-fired space heaters provided that:

1. The heater burns only used oil that the owner or operator generates or used oil received from household do-it-yourselfer used oil generators;

2. The heater is designed to have a maximum capacity of not more than 0.5 million British thermal units per hour; and

3. The combustion gases from the heater are vented to the ambient air.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-624. Offsite shipments.

Except as provided in subsections 1 through 3, generators must ensure that their used oil is transported only by transporters who have obtained identification numbers.

1. **Self-transportation of small amounts to approved collection centers.** Generators may transport, without an identification number, used oil that is generated at the generator's site and used oil collected from household do-it-yourselfers to a used oil collection center provided that:

    a. The generator transports the used oil in a vehicle owned by the generator or owned by an employee of the generator;

    b. The generator transports no more than fifty-five gallons [208.20 liters] of used oil at any time; and

    c. The generator transports the used oil to a used oil collection center that is registered, licensed, permitted, or recognized by a state, county, and municipal government to manage used oil.

2. **Self-transportation of small amounts to aggregation points owned by the generator.** Generators may transport, without an identification number, used oil that is generated at the generator's site to an aggregation point provided that:

    a. The generator transports the used oil in a vehicle owned by the generator or owned by an employee of the generator;

    b. The generator transports no more than fifty-five gallons [208.20 liters] of used oil at any time; and

    c. The generator transports the used oil to an aggregation point that is owned or operated by the same generator.

3. **Tolling arrangements.** Used oil generators may arrange for used oil to be transported by a transporter without an identification number if the used oil is reclaimed under a contractual agreement pursuant to which reclaimed oil is returned by the processor to the generator for use as a lubricant, cutting oil, or coolant. The contract (known as a "tolling arrangement") must indicate:

    a. The type of used oil and the frequency of shipments;

b. That the vehicle used to transport the used oil to the processing facility and to deliver recycled used oil back to the generator is owned and operated by the used oil processor; and

c. That reclaimed oil will be returned to the generator.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-625. [Reserved]

33-24-05-626. [Reserved]

33-24-05-627. [Reserved]

33-24-05-628. [Reserved]

33-24-05-629. [Reserved]

33-24-05-630. Do-it-yourselfer used oil collection centers.

1. **Applicability.** This section applies to owners or operators of all do-it-yourselfer used oil collection centers. A do-it-yourselfer used oil collection center is any site or facility that accepts, aggregates, and stores used oil collected only from household do-it-yourselfers.

2. **Do-it-yourselfer used oil collection center requirements.** Owners or operators of all do-it-yourselfer used oil collection centers must comply with the generator standards in sections 33-24-05-620 through 33-24-05-629.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-631. Used oil collection centers.

1. **Applicability.** This section applies to owners or operators of used oil collection centers. A used oil collection center is any site or facility that accepts, aggregates, and stores used oil collected from used oil generators regulated under sections 33-24-05-620 through 33-24-05-629 who bring used oil to the collection center in shipments of no more than fifty-five gallons [208.20 liters] under the provisions of subsection 1 of section 33-24-05-624. Used oil collection centers may also accept used oil from household do-it-yourselfers.

2. **Used oil collection center requirements.** Owners or operators of all used oil collection centers must:

   a. Comply with the generator standards in sections 33-24-05-620 through 33-24-05-629; and

   b. Be registered, licensed, permitted, and recognized by a state, county, and municipal government to manage used oil.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-632. Used oil aggregation points owned by the generator.

1. **Applicability.** This section applies to owners or operators of all used oil aggregation points. A used oil aggregation point is any site or facility that accepts, aggregates, or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than fifty-five gallons [208.20 liters] under the provisions of subsection 2 of section 33-24-05-624. Used oil aggregation points may also accept used oil from household do-it-yourselfers.

2. **Used oil aggregation point requirements.** Owners or operators of all used oil aggregation points must comply with the generator standards in sections 33-24-05-620 through 33-24-05-629.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-633. [Reserved]

33-24-05-634. [Reserved]

33-24-05-635. [Reserved]

33-24-05-636. [Reserved]

33-24-05-637. [Reserved]

33-24-05-638. [Reserved]

33-24-05-639. [Reserved]

33-24-05-640. Applicability of standards for used oil transporters and transfer facilities.

1. **General**. Except as provided in subdivisions a through d, sections 33-24-05-640 through 33-24-05-649 apply to all used oil transporters. Used oil transporters are persons who transport used oil, persons who collect used oil from more than one generator and transport the collected oil, and owners and operators of used oil transfer facilities.

   a. Sections 33-24-05-640 through 33-24-05-649 do not apply to onsite transportation.

   b. Sections 33-24-05-640 through 33-24-05-649 do not apply to generators who transport shipments of used oil totaling fifty-five gallons [208.20 liters] or less from the generator to a used oil collection center as specified in subsection 1 of section 33-24-05-624.

   c. Sections 33-24-05-640 through 33-24-05-649 do not apply to generators who transport shipments of used oil totaling fifty-five gallons [208.20 liters] or less from the generator to a used oil aggregation point owned or operated by the same generator as specified in subsection 2 of section 33-24-05-624.

d. Sections 33-24-05-640 through 33-24-05-649 do not apply to transportation of used oil from household do-it-yourselfers to a regulated used oil generator, collection center, aggregation point, processor, or burner subject to the requirements of sections 33-24-05-600 through 33-24-05-689. Except as provided in subdivisions a through c, sections 33-24-05-640 through 33-24-05-649 do, however, apply to transportation of collected household do-it-yourselfer used oil from regulated used oil generators, collection centers, aggregation points, or other facilities where household do-it-yourselfer used oil is collected.

2. **Imports and exports.** Transporters who import used oil from abroad or export used oil outside of the United States are subject to the requirements of sections 33-24-05-640 through 33-24-05-649 from the time the used oil enters and until the time it exits the United States.

3. **Trucks used to transport hazardous waste.** Unless trucks previously used to transport hazardous waste are emptied as described in section 33-24-02-07 prior to transporting used oil, the used oil is considered to have been mixed with the hazardous waste and must be managed as hazardous waste unless, under the provisions of subsection 2 of section 33-24-05-610, the hazardous waste and used oil mixture is determined not to be hazardous waste.

4. **Other applicable provisions.** Used oil transporters who conduct the following activities are also subject to other applicable provisions of sections 33-24-05-600 through 33-24-05-689 as indicated in subdivisions a through e:

   a. Transporters who generate used oil must also comply with sections 33-24-05-620 through 33-24-05-629;

   b. Transporters who process used oil, except as provided in section 33-24-05-641, must also comply with sections 33-24-05-650 through 33-24-05-659;

   c. Transporters who burn off-specification used oil for energy recovery must also comply with sections 33-24-05-660 through 33-24-05-669;

   d. Transporters who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in section 33-24-05-611 must also comply with sections 33-24-05-670 through 33-24-05-679; and

   e. Transporters who dispose of used oil must also comply with sections 33-24-05-680 through 33-24-05-689.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-641. Restrictions on transporters who are not also processors.

1. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation. However, except as provided in subsection 2, used oil transporters may not process used oil unless they also comply with the requirements for processors in sections 33-24-05-650 through 33-24-05-659.

2. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (e.g., settling and water separation), but that are not designed to produce (or make more amenable for production of) used oil derived products unless they also comply with the processor requirements in sections 33-24-05-650 through 33-24-05-659.

3. Transporters of used oil that is removed from oil bearing electrical transformers and turbines and filtered by the transporter or at a transfer facility prior to being returned to its original use are not subject to the processor requirements of sections 33-24-05-650 through 33-24-05-659.

History: Effective January 1, 1994; amended effective July 1, 1997.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-642. Notification.

1. **Identification numbers.** Used oil transporters who have not previously complied with the notification requirements of section 33-24-03-03 must comply with these requirements and obtain an identification number.

2. **Mechanics of notification.** A used oil transporter who has not received an identification number may obtain one by notifying the department of their used oil activity by submitting either:

   a. A completed notification of regulated waste activity form (environmental protection agency form 8700-12, or equivalent state form); or

   b. A letter requesting an identification number.

      The letter should include the following information:

      (1) Transporter company name;

      (2) Owner of the transporter company;

      (3) Mailing address for the transporter;

      (4) Name and telephone number for the transporter point of contact;

      (5) Type of transport activity (for example, transport only, transport and transfer facility, transfer facility only);

      (6) Location of all transfer facilities at which used oil is stored; and

      (7) Name and telephone number for a contact at each transfer facility.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-643. Used oil transportation.

1. **Deliveries.** A used oil transporter shall deliver all used oil received to:

   a. Another used oil transporter, provided that the transporter has obtained an identification number;

   b. A used oil processing facility who has obtained an identification number;

   c. An off-specification used oil burner facility who has obtained an identification number; or

   d. An on-specification used oil burner facility.

2. **Department of transportation requirements.** Used oil transporters shall comply with all applicable requirements under the United States department of transportation regulations in 49 CFR parts 171 through 180. Persons transporting used oil that meets the definition of a hazardous material in 49 CFR 171.8 shall comply with all applicable regulations in 49 CFR parts 171 through 180.

3. **Used oil discharges.**

   a. In the event of a discharge of used oil during transportation, the transporter must take appropriate immediate action to protect human health and the environment (for example, notify local authorities, dike the discharge area).

   b. If a discharge of used oil occurs during transportation and an official (state or local government or a federal agency) acting within the scope of official responsibilities determines that immediate removal of the used oil is necessary to protect human health or the environment, that official may authorize the removal of the used oil by transporters who do not have identification numbers.

   c. An air, rail, highway, or water transporter who has discharged used oil must:

      (1) Give notice, if required by 49 CFR 171.15 to the national response center (800-424-8802 or 202-426-2675); and

      (2) Report in writing as required by 49 CFR 171.16 to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590.

   d. A water transporter who has discharged used oil shall give notice as required by 33 CFR 153.203.

   e. A transporter shall clean up any used oil discharge that occurs during transportation or take such action as may be required or approved by federal, state, or local officials so that the used oil discharge no longer presents a hazard to human health or the environment.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-644. Rebuttable presumption for used oil.

1. To ensure that used oil is not a hazardous waste under the rebuttable presumption of paragraph 2 of subdivision a of subsection 2 of section 33-24-05-610, the used oil transporter shall determine whether the total halogen content of used oil being transported or stored at a transfer facility is above or below one thousand parts per million.

2. The transporter shall make this determination by:

   a. Testing the used oil; or

   b. Applying knowledge of the halogen content of the used oil in light of the materials or processes used.

3. If the used oil contains greater than or equal to one thousand parts per million total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in sections 33-24-02-15 through 33-24-02-19. The owner or operator may rebut the presumption by demonstrating that the used oil does not contain hazardous

waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix V of chapter 33-24-02).

a. The rebuttable presumption does not apply to metalworking oils or fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in subsection 3 of section 33-24-05-624, to reclaim metalworking oils or fluids. The presumption does apply to metalworking oils or fluids if such oils or fluids are recycled in any other manner, or disposed.

b. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons removed from refrigeration units if the chlorofluorocarbons are destined for reclamation. The rebuttable presumption does apply to used oil contaminated with chlorofluorocarbons that have been mixed with used oil from sources other than refrigeration units.

4. Record retention. Records of analyses conducted or information used to comply with subsections 1, 2, and 3 must be maintained by the transporter for at least three years.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-645. Used oil storage at transfer facilities.

Used oil transporters are subject to all applicable spill prevention, control, and countermeasures [40 CFR part 112] in addition to the requirements of sections 33-24-05-640 through 33-24-05-649. Used oil transporters are also subject to the underground storage tank (chapter 33-24-08) standards for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of sections 33-24-05-640 through 33-24-05-649.

1. **Applicability.** This section applies to used oil transfer facilities. Used oil transfer facilities are transportation-related facilities including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than twenty-four hours during the normal course of transportation and not longer than thirty-five days. Transfer facilities that store used oil for more than thirty-five days are subject to regulation under sections 33-24-05-650 through 33-24-05-659.

2. **Storage units.** Owners or operators of used oil transfer facilities may not store used oil in units other than tanks, containers, or units subject to regulation under sections 33-24-05-01 through 33-24-05-190, sections 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, 33-24-05-800 through 33-24-05-819, or the applicable requirements of subsection 5 of section 33-24-06-16.

3. **Condition of units.** Containers and aboveground tanks used to store used oil at transfer facilities must be:

   a. In good condition (no severe rusting, apparent structural defects, or deterioration); and

   b. Not leaking (no visible leaks).

4. **Secondary containment for containers.** Containers used to store used oil at transfer facilities must be equipped with a secondary containment system.

   a. The secondary containment system must consist of, at a minimum:

      (1) Dikes, berms, or retaining walls; and

(2) A floor. The floor must cover the entire area within the dikes, berms, or retaining walls; or

(3) An equivalent secondary containment system.

b. The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

5. **Secondary containment for existing aboveground tanks.** Existing aboveground tanks used to store used oil at transfer facilities must be equipped with a secondary containment system.

a. The secondary containment system must consist of, at a minimum:

(1) Dikes, berms, or retaining walls; and

(2) A floor. The floor must cover the entire area within the dike, berm, or retaining wall except areas where existing portions of the tank meet the ground; or

(3) An equivalent secondary containment system.

b. The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

6. **Secondary containment for new aboveground tanks.** New aboveground tanks used to store used oil at transfer facilities must be equipped with a secondary containment system.

a. The secondary containment system must consist of, at a minimum:

(1) Dikes, berms, or retaining walls; and

(2) A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or

(3) An equivalent secondary containment system.

b. The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

7. **Labels.**

a. Containers and aboveground tanks used to store used oil at transfer facilities must be labeled or marked clearly with the words "Used Oil".

b. Fill pipes used to transfer used oil into underground storage tanks at transfer facilities must be labeled or marked clearly with the words "Used Oil".

8. **Response to releases.** Upon detection of a release of used oil to the environment not subject to the requirements of chapter 33-24-08, sections 33-24-08-50 through 33-24-08-59, the owner or operator of a transfer facility must perform the following cleanup steps:

a. Stop the release;

b. Contain the released used oil;

c. Clean up and manage properly the released used oil and other materials; and

d. If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-646. Tracking.

1. **Acceptance.** Used oil transporters must keep a record of each used oil shipment accepted for transport. Records for each shipment must include:

   a. The name and address of the generator, transporter, or processor who provided the used oil for transport;

   b. The identification number (if applicable) of the generator, transporter, or processor who provided the used oil for transport;

   c. The quantity of used oil accepted;

   d. The date of acceptance; and

   e. The signature, dated upon receipt of the used oil, of a representative of the generator, transporter, or processor who provided the used oil for transport.

   f. Intermediate rail transporters are not required to sign the record of acceptance to comply with subdivision e.

2. **Deliveries.** Used oil transporters must keep a record of each shipment of used oil that is delivered to another used oil transporter, or to a used oil burner, processor, or disposal facility. Records of each delivery must include:

   a. The name and address of the receiving facility or transporter;

   b. The identification number of the receiving facility or transporter;

   c. The quantity of used oil delivered;

   d. The date of delivery; and

   e. The signature, dated upon receipt of the used oil, of a representative of the receiving facility or transporter.

   f. Intermediate rail transporters are not required to sign the record of acceptance to comply with subdivision e.

3. **Exports of used oil.** Used oil transporters must maintain the records described in subdivisions a through d of subsection 2 for each shipment of used oil exported to any foreign country.

4. **Record retention.** The records described in subsections 1, 2, and 3 must be maintained for at least three years.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-647. Management of residues.

Transporters who generate residues from the storage or transport of used oil must manage the residues as specified in subsection 5 of section 33-24-05-610.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-648. [Reserved]

33-24-05-649. [Reserved]

33-24-05-650. Applicability of standards for used oil processors.

1. The requirements of sections 33-24-05-650 through 33-24-05-659 apply to owners and operators of facilities that process used oil. Processing means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of, fuel oils, lubricants, or other used oil-derived products. Processing includes: blending used oil with virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation, and re-refining. The requirements of sections 33-24-05-650 through 33-24-05-659 do not apply to:

    a. Transporters who conduct incidental processing operations that occur during the normal course of transportation as provided in section 33-24-05-641; or

    b. Burners who conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in subsection 2 of section 33-24-05-661.

2. Other applicable provisions. Used oil processors who conduct the following activities are also subject to the requirements of other applicable provisions of sections 33-24-05-600 through 33-24-05-689 as indicated in subdivisions a through e.

    a. Processors who generate used oil must also comply with sections 33-24-05-620 through 33-24-05-629;

    b. Processors who transport used oil must also comply with sections 33-24-05-640 through 33-24-05-649;

    c. Except as provided in paragraphs 1 and 2, processors who burn off-specification used oil for energy recovery must also comply with sections 33-24-05-660 through 33-24-05-669. Processors burning used oil for energy recovery under the following conditions are not subject to sections 33-24-05-660 through 33-24-05-669:

        (1) The used oil is burned in an onsite space heater that meets the requirements of section 33-24-05-623; or

        (2) The used oil is burned for purposes of processing used oil, which is considered burning incidentally to used oil processing;

    d. Processors who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in section 33-24-05-611 must also comply with sections 33-24-05-670 through 33-24-05-679; and

e. Processors who dispose of used oil also must comply with the applicable sections 33-24-05-680 through 33-24-05-689.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-651. Notification.

1. **Identification numbers.** Used oil processors who have not previously complied with the notification requirements of section 33-24-03-03 must comply with these requirements and obtain an identification number.

2. **Mechanics of notification.** A used oil processor who has not received an identification number may obtain one by notifying the department of their used oil activity by submitting either:

   a. A completed notification of regulated waste activity form (environmental protection agency form 8700-12, or equivalent state form); or

   b. A letter requesting an identification number.

      The letter should include the following information:

      (1) Processor company name;

      (2) Owner of the processor company;

      (3) Mailing address for the processor;

      (4) Name and telephone number for the processor point of contact;

      (5) Type of used oil activity; and

      (6) Location of the processor facility.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-652. General facility standards.

1. **Preparedness and prevention.** Owners and operators of used oil processing facilities shall comply with the following requirements:

   a. Maintenance and operation of facility. Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of used oil to air, soil, or surface water which could threaten human health or the environment.

   b. Required equipment. All facilities must be equipped with the following, unless none of the hazards posed by used oil handled at the facility could require a particular kind of equipment specified in paragraphs 1 through 4:

      (1) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

(2) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;

(3) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

(4) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

c. Testing and maintenance of equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

d. Access to communications or alarm system.

(1) When used oil is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required in subdivision b.

(2) If there is only one employee on the premises while the facility is operating, the employee must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required in subdivision b.

e. Required aisle space. The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

f. Arrangements with local authorities.

(1) The owner or operator shall attempt to make the following arrangements, as appropriate for the type of used oil handled at the facility and the potential need for the services of these organizations:

(a) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of used oil handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;

(b) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

(c) Agreements with state emergency response teams, emergency response contractors, and equipment suppliers; and

(d) Arrangements to familiarize local hospitals with the properties of used oil handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(2) Where state or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

2. **Contingency plan and emergency procedures.** Owners and operators of used oil processing facilities must comply with the following requirements:

a. Purpose and implementation of contingency plan.

(1) Each owner or operator must have a contingency plan for the facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of used oil to air, soil, or surface water.

(2) The provisions of the plan must be carried out immediately when there is a fire, explosion, or release of used oil which could threaten human health or the environment.

b. Content of contingency plan.

(1) The contingency plan must describe the actions facility personnel must take to comply with subdivisions a and f in response to fires, explosions, or any unplanned sudden or nonsudden release of used oil to air, soil, or surface water at the facility.

(2) If the owner or operator has already prepared a spill prevention, control, and countermeasures (SPCC) plan in accordance with 40 CFR part 112, or 40 CFR part 1510 of chapter V, or some other emergency or contingency plan, the owner or operator need only amend that plan to incorporate used oil management provisions that are sufficient to comply with the requirements of sections 33-24-05-600 through 33-24-05-689.

(3) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services, pursuant to subdivision f of subsection 1.

(4) The plan must list names, addresses, and telephone numbers (office and home) of all persons qualified to act as emergency coordinator (see subdivision e), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

(5) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(6) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signals to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of used oil or fires).

c. Copies of contingency plan. A copy of the contingency plan and all revisions to the plan must be:

(1) Maintained at the facility; and

(2) Submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

d. Amendment of contingency plan. The contingency plan must be reviewed, and immediately amended, if necessary, when:

(1) Applicable regulations are revised;

(2) The plan fails in an emergency;

(3) The facility changes (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for fires, explosions, or releases of used oil, or changes the response necessary in an emergency;

(4) The list of emergency coordinators changes; or

(5) The list of emergency equipment changes.

e. Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call (for example, available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristic of used oil handled, the location of all records within the facility, and facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

Guidance: The emergency coordinator's responsibilities are more fully spelled out in subdivision f. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of used oil handled by the facility, and type and complexity of the facility.

f. Emergency procedures.

(1) When there is an imminent or actual emergency situation, the emergency coordinator (or the designee when the emergency coordinator is on call) must immediately:

(a) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(b) Notify appropriate state or local agencies with designated response roles if their help is needed.

(2) When there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. The emergency coordinator may do this by observation or review of facility records or manifests and, if necessary, by chemical analyses.

(3) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (for example, the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosions).

(4) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, the emergency coordinator must report these findings as follows:

(a) If the emergency coordinator's assessment indicated that evacuation of local areas may be advisable, the emergency coordinator must immediately notify appropriate local authorities. The emergency coordinator must be available to help appropriate officials decide whether local areas should be evacuated; and

(b) The emergency coordinator must immediately notify either the government official designated as the onscene coordinator for the geographical area (in the applicable regional contingency plan under part 1510 of 40 CFR), or the national response center (using their twenty-four-hour toll-free number 800-424-8802). The report must include:

[1] Name and telephone number of reporter;

[2] Name and address of facility;

[3] Time and type of incident (for example, release, fire);

[4] Name and quantity of materials involved, to the extent known;

[5] The extent of injuries, if any; and

[6] The possible hazards to human health, or the environment, outside the facility.

(5) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other used oil or hazardous waste at the facility. These measures must include, where applicable, stopping processes and operation, collecting and containing released used oil, and removing or isolating containers.

(6) If the facility stops operation in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(7) Immediately after an emergency, the emergency coordinator must provide for recycling, storing, or disposing of recovered used oil, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(8) The emergency coordinator must ensure that, in the affected areas of the facility:

(a) No waste or used oil that may be incompatible with the released material is recycled, treated, stored, or disposed of until cleanup procedures are completed; and

(b) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(c) The owner or operator must notify the department, and appropriate state and local authorities that the facility is in compliance with subparagraphs a and b before operations are resumed in the affected areas of the facility.

(9) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen days

after the incident, the owner or operator must submit a written report on the incident to the department. The report must include:

(a) Name, address, and telephone number of the owner or operator;

(b) Name, address, and telephone number of the facility;

(c) Date, time, and type of incident (for example, fire, explosion);

(d) Name and quantity of materials involved;

(e) The extent of injuries, if any;

(f) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

(g) Estimated quantity and disposition of recovered material that resulted from the incident.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-653. Rebuttable presumption for used oil.

1. To ensure that used oil managed at a processing facility is not hazardous waste under the rebuttable presumption of paragraph 2 of subdivision a of subsection 2 of section 33-24-05-610, the owner or operator of a used oil processing facility must determine whether the total halogen content of used oil managed at the facility is above or below one thousand parts per million.

2. The owner or operator must make this determination by:

   a. Testing the used oil; or

   b. Applying knowledge of the halogen content of the used oil in light of the materials or processes used.

3. If the used oil contains greater than or equal to one thousand parts per million total halogens, it is presumed to be hazardous waste because it has been mixed with halogenated hazardous waste listed in sections 33-24-02-15 through 33-24-02-19. The owner or operator may rebut the presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix V of chapter 33-24-02).

   a. The rebuttable presumption does not apply to metalworking oils or fluids containing chlorinated paraffins, if they are processed, through a tolling agreement, to reclaim metalworking oils or fluids. The presumption does apply to metalworking oils or fluids if such oils or fluids are recycled in any other manner, or disposed.

   b. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons removed from refrigeration units where the chlorofluorocarbons are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with chlorofluorocarbons that have been mixed with used oil from sources other than refrigeration units.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-654. Used oil management.

Used oil processors are subject to all applicable spill prevention, control, and countermeasures [40 CFR part 112] in addition to the requirements of sections 33-24-05-650 through 33-24-05-659. Used oil processors are also subject to the underground storage tank (chapter 33-24-08) standards for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of sections 33-24-05-650 through 33-24-05-659.

1. **Management units.** Used oil processors may not store used oil in units other than tanks, containers, or units subject to regulation under sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, 33-24-05-800 through 33-24-05-819, or the applicable requirements of subsection 5 of section 33-24-06-16.

2. **Condition of units.** Containers and aboveground tanks used to store or process used oil at processing facilities must be:

   a. In good condition (no severe rusting, apparent structural defects, or deterioration); and

   b. Not leaking (no visible leaks).

3. **Secondary containment for containers.** Containers used to store or process used oil at processing facilities must be equipped with a secondary containment system.

   a. The secondary containment system must consist of, at a minimum:

      (1) Dikes, berms, or retaining walls; and

      (2) A floor. The floor must cover the entire area within the dike, berm, or retaining walls; or

      (3) An equivalent secondary containment system.

   b. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

4. **Secondary containment for existing aboveground tanks.** Existing aboveground tanks used to store or process used oil at processing facilities must be equipped with a secondary containment system.

   a. The secondary containment system must consist of, at a minimum:

      (1) Dikes, berms, or retaining walls; and

      (2) A floor. The floor must cover the entire area within the dike, berm, or retaining wall except areas where existing portions of the tank meet the ground; or

      (3) An equivalent secondary containment system.

   b. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

5. **Secondary containment for new aboveground tanks.** New aboveground tanks used to store or process used oil at processing facilities must be equipped with a secondary containment system.

   a. The secondary containment system must consist of, at a minimum:

      (1) Dikes, berms, or retaining walls; and

      (2) A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or

      (3) An equivalent secondary containment system.

   b. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

6. **Labels.**

   a. Containers and aboveground tanks used to store or process used oil at processing facilities must be labeled or marked clearly with the words "Used Oil".

   b. Fill pipes used to transfer used oil into underground storage tanks at processing facilities must be labeled or marked clearly with the words "Used Oil".

7. **Response to releases.** Upon detection of a release of used oil to the environment not subject to the requirements of chapter 33-24-08, sections 33-24-08-50 through 33-24-08-59, an owner or operator must perform the following cleanup steps:

   a. Stop the release;

   b. Contain the released used oil;

   c. Clean up and manage properly the released used oil and other materials; and

   d. If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

8. **Closure.**

   a. Aboveground tanks. Owners and operators who store or process used oil in aboveground tanks must comply with the following requirements:

      (1) At closure of a tank system, the owner or operator must remove or decontaminate used oil residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste, unless the materials are not hazardous waste under article 33-24.

      (2) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in paragraph 1, then the owner or operator must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements that apply to hazardous waste landfills (section 33-24-05-180).

   b. Containers. Owners and operators who store used oil in containers must comply with the following requirements:

(1) At closure, containers holding used oils or residues of used oil must be removed from the site; and

(2) The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste, unless the materials are not hazardous waste under chapter 33-24-02.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-655. Analysis plan.

Owners or operators of used oil processing facilities must develop and follow a written analysis plan describing the procedures that will be used to comply with the analysis requirements of section 33-24-05-653 and, if applicable, section 33-24-05-672. The owner or operator must keep the plan at the facility.

1. Rebuttable presumption for used oil in section 33-24-05-653. At a minimum, the plan must specify the following:

   a. Whether sample analyses or knowledge of the halogen content of the used oil will be used to make this determination.

   b. If sample analyses are used to make this determination:

      (1) The sampling method used to obtain representative samples to be analyzed. A representative sample may be obtained using either:

         (a) One of the sampling methods in appendix I of chapter 33-24-02; or

         (b) A method shown to be equivalent under sections 33-24-01-06 and 33-24-01-07;

      (2) The frequency of sampling to be performed, and whether the analysis will be performed onsite or offsite; and

      (3) The methods used to analyze used oil for the parameters specified in section 33-24-05-653; and

   c. The type of information that will be used to determine the halogen content of the used oil.

2. On-specification used oil fuel in section 33-24-05-672. At a minimum, the plan must specify the following if section 33-24-05-672 is applicable:

   a. Whether sample analyses or other information will be used to make this determination;

   b. If sample analyses are used to make this determination:

      (1) The sampling method used to obtain representative samples to be analyzed. A representative sample may be obtained using either:

         (a) One of the sampling methods in appendix I of chapter 33-24-02; or

         (b) A method shown to be equivalent under sections 33-24-01-06 and 33-24-01-07;

(2) Whether used oil will be sampled and analyzed prior to or after any processing;

(3) The frequency of sampling to be performed, and whether the analysis will be performed onsite or offsite; and

(4) The methods used to analyze used oil for the parameters specified in section 33-24-05-672; and

c. The type of information that will be used to make the on-specification used oil fuel determination.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-656. Tracking.

1. **Acceptance.** Used oil processors must keep a record of each used oil shipment accepted for processing. These records may take the form of a log, invoice, manifest, bill of lading, or other shipping documents. Records for each shipment must include the following information:

   a. The name and address of the transporter who delivered the used oil to the processor;

   b. The name and address of the generator or processor from whom the used oil was sent for processing;

   c. The identification number of the transporter who delivered the used oil to the processor;

   d. The identification number (if applicable) of the generator or processor from whom the used oil was sent for processing;

   e. The quantity of used oil accepted; and

   f. The date of acceptance.

2. **Delivery.** Used oil processor must keep a record of each shipment of used oil that is shipped to a used oil burner, processor, or disposal facility. These records may take the form of a log, invoice, manifest, bill of lading, or other shipping documents. Records for each shipment must include the following information:

   a. The name and address of the transporter who delivers the used oil to the burner, processor, or disposal facility;

   b. The name and address of the burner, processor, or disposal facility that will receive the used oil;

   c. The identification number of the transporter who delivers the used oil to the burner, processor, or disposal facility;

   d. The identification number of the burner, processor, or disposal facility that will receive the used oil;

   e. The quantity of used oil shipped; and

   f. The date of shipment.

3. **Record retention.** The records described in subsections 1 and 2 must be maintained for at least three years.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-657. Operating record and reporting.

1. **Operating record.**

   a. The owner or operator must keep a written operating record at the facility.

   b. The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility;

      (1) Records and results of used oil analyses performed as described in the analysis plan required under section 33-24-05-655; and

      (2) Summary reports and details of all incidents that require implementation of the contingency plan as specified in subsection 2 of section 33-24-05-652.

2. **Reporting.** A used oil processor must report to the department, in the form of a letter, on a biennial basis (by March first of each even-numbered year), the following information concerning used oil activities during the previous calendar year:

   a. The identification number, name, and address of the processor;

   b. The calendar year covered by the report; and

   c. The quantities of used oil accepted for processing and the manner in which the used oil is processed, including the specific processes employed.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-658. Offsite shipments of used oil.

Used oil processors who initiate shipments of used oil offsite must ship the used oil using a used oil transporter who has obtained an identification number.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-659. Management of residues.

Owners and operators who generate residues from the storage or processing of used oil must manage the residues as specified in subsection 5 of section 33-24-05-610.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-660. Applicability of standards for used oil burners who burn off-specification used oil for energy recovery.

1. **General.** The requirements of sections 33-24-05-660 through 33-24-05-669 apply to used oil burners except as specified in subdivisions a and b. A used oil burner is a facility where used oil not meeting the specification requirements in section 33-24-05-611 is burned for energy

recovery in devices identified in subsection 1 of section 33-24-05-661. Facilities burning used oil for energy recovery under the following conditions are not subject to sections 33-24-05-660 through 33-24-05-669:

a. The used oil is burned by the generator in an onsite space heater under the provisions of section 33-24-05-623; or

b. The used oil is burned by a processor for purposes of processing used oil, which is considered burning incidentally to used oil processing.

2. **Other applicable provisions.** Used oil burners who conduct the following activities are also subject to the requirements of other applicable provisions of sections 33-24-05-600 through 33-24-05-689 as indicated below.

a. Burners who generate used oil must also comply with sections 33-24-05-620 through 33-24-05-629;

b. Burners who transport used oil must also comply with sections 33-24-05-640 through 33-24-05-649;

c. Except as provided in subsection 2 of section 33-24-05-661, burners who process or re-refine used oil must also comply with sections 33-24-05-650 through 33-24-05-659;

d. Burners who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in section 33-24-05-611 must also comply with sections 33-24-05-670 through 33-24-05-679; and

e. Burners who dispose of used oil must comply with sections 33-24-05-680 through 33-24-05-689.

3. **Specification fuel.** Sections 33-24-05-660 through 33-24-05-669 do not apply to persons burning used oil that meets the used oil fuel specifications of section 33-24-05-611, provided that the burner complies with the requirements of sections 33-24-05-670 through 33-24-05-679.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-661. Restrictions on burning.

1. Off-specification used oil fuel may be burned for energy recovery in only the following devices:

a. Industrial furnaces identified in section 33-24-01-04;

b. Boilers, as defined in section 33-24-01-04, which are identified as follows:

(1) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes;

(2) Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale; or

(3) Used oil-fired space heaters provided that the burner meets the provisions of section 33-24-05-623; or

c. Hazardous waste incinerators subject to regulation under sections 33-24-05-144 through 33-24-05-159.

2. **Used oil burners.**

a. With the following exception, used oil burners may not process used oil unless they also comply with the requirements of sections 33-24-05-650 through 33-24-05-659.

b. Used oil burners may aggregate off-specification used oil with virgin oil or on-specification used oil for purposes of burning, but may not aggregate for purposes of producing on-specification used oil.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-662. Notification.

1. **Identification numbers.** Used oil burners who have not previously complied with the notification requirements of section 33-24-03-03 must comply with these requirements and obtain an identification number.

2. **Mechanics of notification.** A used oil burner who has not received an identification number may obtain one by notifying the department of the used oil burner's used oil activity by submitting either:

a. A completed notification of regulated waste activity form (environmental protection agency form 8700-12, or equivalent state form); or

b. A letter requesting an identification number. The letter should include the following information:

(1) Burner company name;

(2) Owner of the burner company;

(3) Mailing address for the burner;

(4) Name and telephone number for the burner point of contact;

(5) Type of used oil activity; and

(6) Location of the burner facility.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-663. Rebuttable presumption for used oil.

1. To ensure that used oil managed at a used oil burner facility is not hazardous waste under the rebuttable presumption of paragraph 2 of subdivision a of subsection 2 of section 33-24-05-610, a used oil burner must determine whether the total halogen content of used oil managed at the facility is above or below one thousand parts per million.

2. The used oil burner must determine if the used oil contains above or below one thousand parts per million total halogens by:

a. Testing the used oil;

b. Applying knowledge of the halogen content of the used oil in light of the materials or processes used; or

c. If the used oil has been received from a processor subject to regulation under sections 33-24-05-650 through 33-24-05-659, using information provided by the processor.

3. If the used oil contains greater than or equal to one thousand parts per million total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in sections 33-24-02-15 through 33-24-02-19. The owner or operator may rebut the presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix V of chapter 33-24-02).

   a. The rebuttable presumption does not apply to metalworking oils or fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in subsection 3 of section 33-24-05-624, to reclaim metalworking oils or fluids. The presumption does apply to metalworking oils or fluids if such oils or fluids are recycled in any other manner, or disposed.

   b. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons removed from refrigeration units where the chlorofluorocarbons are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with chlorofluorocarbons that have been mixed with used oil from sources other than refrigeration units.

4. Record retention. Records of analyses conducted or information used to comply with subsections 1, 2, and 3 must be maintained by the burner for at least three years.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-664. Used oil storage.

Used oil burners are subject to all applicable spill prevention, control, and countermeasures [40 CFR part 112] in addition to the requirements of sections 33-24-05-660 through 33-24-05-669. Used oil burners are also subject to the underground storage tank (chapter 33-24-08) standards for used oil stored in underground tanks whether or not the used oil exhibits any characteristics of hazardous waste, in addition to the requirements of sections 33-24-05-660 through 33-24-05-669.

1. **Storage units.** Used oil burners may not store used oil in units other than tanks, containers, or units subject to regulation under sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, 33-24-05-800 through 33-24-05-819, or the applicable requirements of subsection 5 of section 33-24-06-16.

2. **Condition of units.** Containers and aboveground tanks used to store oil at burner facilities must be:

   a. In good condition (no severe rusting, apparent structural defects, or deterioration); and

   b. Not leaking (no visible leaks).

3. **Secondary containment for containers.** Containers used to store used oil at burner facilities must be equipped with a secondary containment system.

a. The secondary containment system must consist of, at a minimum:

(1) Dikes, berms, or retaining walls; and

(2) A floor. The floor must cover the entire area within the dike, berm, or retaining wall.

b. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

4. **Secondary containment for existing aboveground tanks.** Existing aboveground tanks used to store used oil at burner facilities must be equipped with a secondary containment system.

a. The secondary containment system must consist of, at a minimum:

(1) Dikes, berms, or retaining walls; and

(2) A floor. The floor must cover the entire area within the dike, berm, or retaining wall except areas where existing portions of the tank meet the ground; or

(3) An equivalent secondary containment system.

b. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

5. **Secondary containment for new aboveground tanks.** New aboveground tanks used to store used oil at burner facilities must be equipped with a secondary containment system.

a. The secondary containment system must consist of, at a minimum:

(1) Dikes, berms, or retaining walls; and

(2) A floor. The floor must cover the entire area within the dike, berm, or retaining wall; or

(3) An equivalent secondary containment system.

b. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, ground water, or surface water.

6. **Labels.**

a. Containers and aboveground tanks used to store used oil at burner facilities must be labeled or marked clearly with the words "Used Oil".

b. Fill pipes used to transfer used oil into underground storage tanks at burner facilities must be labeled or marked clearly with the words "Used Oil".

7. **Response to releases.** Upon detection of a release of used oil to the environment not subject to the requirements of chapter 33-24-08, sections 33-24-08-50 through 33-24-08-59, a burner must perform the following cleanup steps:

a. Stop the release;

b. Contain the released used oil;

c. Clean up and manage properly the released used oil and other materials; and

d. If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-665. Tracking.

1. **Acceptance.** Used oil burners must keep a record of each used oil shipment accepted for burning. These records may take the form of a log, invoice, manifest, bill of lading, or other shipping documents. Records for each shipment must include the following information:

   a. The name and address of the transporter who delivered the used oil to the burner;

   b. The name and address of the generator or processor from whom the used oil was sent to the burner;

   c. The identification number of the transporter who delivered the used oil to the burner;

   d. The identification number (if applicable) of the generator or processor from whom the used oil was sent to the burner;

   e. The quantity of used oil accepted; and

   f. The date of acceptance.

2. **Record retention.** The records described in subsection 1 must be maintained for at least three years.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-666. Notices.

1. **Certification.** Before a burner accepts the first shipment of off-specification used oil fuel from a generator, transporter, or processor, the burner must provide to the generator, transporter, or processor a one-time written and signed notice certifying that:

   a. The burner has notified the department stating the location and general description of the burner's used oil management activities; and

   b. The burner will burn the used oil only in an industrial furnace or boiler identified in subsection 1 of section 33-24-05-661.

2. **Certification retention.** The certification described in subsection 1 must be maintained for three years from the date the burner last receives shipment of off-specification used oil from that generator, transporter, or processor.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-667. Management of residues.

Burners who generate residues from the storage or burning of used oil must manage the residues as specified in subsection 5 of section 33-24-05-610.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-668. [Reserved]

33-24-05-669. [Reserved]

33-24-05-670. Applicability of standards for used oil fuel marketers.

1. Any person who conducts either of the following activities is subject to the requirements of sections 33-24-05-670 through 33-24-05-679:

   a. Directs a shipment of off-specification used oil from their facility to a used oil burner; or

   b. First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in section 33-24-05-611.

2. The following persons are not marketers subject to sections 33-24-05-670 through 33-24-05-679:

   a. Used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner. However, processors who burn some used oil fuel for purposes of processing are considered to be burning incidentally to processing. Thus, generators and transporters who direct shipments of off-specification used oil to processors who incidentally burn used oil are not marketers subject to sections 33-24-05-670 through 33-24-05-679;

   b. Persons who direct shipments of on-specification used oil and who are not the first person to claim the oil meets the used oil fuel specifications of section 33-24-05-611.

3. Any person subject to the requirements of sections 33-24-05-670 through 33-24-05-679 must also comply with one of the following:

   a. Sections 33-24-05-620 through 33-24-05-629 - standards for used oil generators;

   b. Sections 33-24-05-640 through 33-24-05-649 - standards for used oil transporters and transfer facilities;

   c. Sections 33-24-05-650 through 33-24-05-659 - standards for used oil processors; or

   d. Sections 33-24-05-660 through 33-24-05-669 - standards for used oil burners who burn off-specification used oil for energy recovery.

History: Effective January 1, 1994; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-671. Prohibitions.

A used oil fuel marketer may initiate a shipment of off-specification used oil only to a used oil burner who:

1. Has an identification number; and

2. Burns the used oil in an industrial furnace or boiler identified in subsection 1 of section 33-24-05-661.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-672. On-specification used oil fuel.

1. **Analysis of used oil fuel.** A generator, transporter, processor, or burner may determine that used oil that is to be burned for energy recovery meets the fuel specifications of section 33-24-05-611 by performing analyses or obtaining copies of analyses or other information documenting that the used oil fuel meets the specifications.

2. **Record retention.** A generator, transporter, processor, or burner who first claims that used oil that is to be burned for energy recovery meets the specifications for used oil fuel under section 33-24-05-611, must keep copies of analyses of the used oil (or other information used to make the determination) for three years.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-673. Notification.

1. Identification numbers. A used oil fuel marketer subject to the requirements of sections 33-24-05-670 through 33-24-05-679 who has not previously complied with the notification requirements of section 33-24-03-03 must comply with these requirements and obtain an identification number.

2. A marketer who has not received an identification number may obtain one by notifying the department of their used oil activity by submitting either:

   a. A completed notification of regulated waste activity form (environmental protection agency form 8700-12, or equivalent state form); or

   b. A letter requesting an identification number. The letter should include the following information:

      (1) Marketer company name;

      (2) Owner of the marketer;

      (3) Mailing address for the marketer;

      (4) Name and telephone number for the marketer point of contact; and

      (5) Type of used oil activity (for example, generator directing shipments of off-specification used oil to a burner).

History: Effective January 1, 1994; amended effective July 1, 1997; December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-674. Tracking.

1. **Off-specification used oil delivery.** Any used oil marketer who directs a shipment of off-specification used oil to a burner must keep a record of each shipment of used oil to a used oil burner. These records may take the form of a log, invoice, manifest, bill of lading, or other shipping documents. Records for each shipment must include the following information:

   a. The name and address of the transporter who delivers the used oil to the burner;

   b. The name and address of the burner who will receive the used oil;

   c. The identification number of the transporter who delivers the used oil to the burner;

   d. The identification number of the burner;

   e. The quantity of used oil shipped; and

   f. The date of shipment.

2. **On-specification used oil delivery.** A generator, transporter, processor, or burner who first claims that used oil that is to be burned for energy recovery meets the fuel specifications under section 33-24-05-611 must keep a record of each shipment of used oil to the facility to which it delivers the used oil. Records for each shipment must include the following information:

   a. The name and address of the facility receiving the shipment;

   b. The quantity of used oil fuel delivered;

   c. The date of shipment or delivery; and

   d. A cross-reference to the record of used oil analysis or other information used to make the determination that the oil meets the specifications as required under subsection 1 of section 33-24-05-672.

3. **Record retention.** The records described in subsections 1 and 2 must be maintained for at least three years.

History: Effective January 1, 1994; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-675. Notices.

1. **Certification.** Before a used oil generator, transporter, or processor directs the first shipment of off-specification used oil fuel to a burner, the generator, transporter, or processor must obtain a one-time written and signed notice from the burner certifying that:

   a. The burner has notified the department stating the location and general description of used oil management activities; and

   b. The burner will burn the off-specification used oil only in an industrial furnace or boiler identified in subsection 1 of section 33-24-05-661.

2. **Certification retention.** The certification described in subsection 1 must be maintained for three years from the date the last shipment of off-specification used oil is shipped to the burner.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-676. [Reserved]

33-24-05-677. [Reserved]

33-24-05-678. [Reserved]

33-24-05-679. [Reserved]

33-24-05-680. Applicability of standards for disposal of used oil.

The requirements of sections 33-24-05-680 through 33-24-05-689 apply to all used oils that cannot be recycled and are therefore being disposed.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-681. Disposal.

1. **Disposal of hazardous used oils.** Used oils that are identified as a hazardous waste and cannot be recycled in accordance with sections 33-24-05-600 through 33-24-05-689 must be managed in accordance with the hazardous waste management requirements of article 33-24.

2. **Disposal of nonhazardous used oils.** Used oils that are not hazardous wastes and cannot be recycled under sections 33-24-05-600 through 33-24-05-689 must be disposed in accordance with the requirements of article 33-20.

History: Effective January 1, 1994.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-682. [Reserved]

33-24-05-683. [Reserved]

33-24-05-684. [Reserved]

33-24-05-685. [Reserved]

33-24-05-686. [Reserved]

33-24-05-687. [Reserved]

33-24-05-688. [Reserved]

33-24-05-689. [Reserved]

33-24-05-690. [Reserved]

33-24-05-691. [Reserved]

33-24-05-692. [Reserved]

33-24-05-693. [Reserved]

33-24-05-694. [Reserved]

33-24-05-695. [Reserved]

33-24-05-696. [Reserved]

33-24-05-697. [Reserved]

33-24-05-698. [Reserved]

33-24-05-699. [Reserved]

33-24-05-700. [Reserved]

33-24-05-701. Scope of universal waste rule.

1. Sections 33-24-05-700 through 33-24-05-799 establish requirements for managing the following:

   a. Batteries as described in section 33-24-05-702;

   b. Pesticides as described in section 33-24-05-703;

   c. Mercury containing equipment as described in section 33-24-05-704; and

   d. Lamps as described in section 33-24-05-705.

2. Sections 33-24-05-700 through 33-24-05-799 provide an alternative set of management standards in lieu of regulation under chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-702. Applicability - Batteries.

1. **Batteries covered under sections 33-24-05-700 through 33-24-05-799**.

   a. The requirements of sections 33-24-05-700 through 33-24-05-799 apply to persons managing batteries as described in section 33-24-01-04, except as those listed in subsection 2.

   b. Spent lead-acid batteries which are not managed under sections 33-24-05-235 through 33-24-05-249 are subject to management under sections 33-24-05-700 through 33-24-05-799.

2. **Batteries not covered under sections 33-24-05-700 through 33-24-05-799**. The requirements of sections 33-24-05-700 through 33-24-05-799 do not apply to persons managing the following batteries:

   a. Spent lead-acid batteries that are managed under sections 33-24-05-235 through 33-24-05-249.

   b. Batteries, as described in section 33-24-01-04, that are not yet wastes under chapter 33-24-02, including those that do not meet the criteria for waste generation in subsection 3.

   c. Batteries, as described in section 33-24-01-04, that are not hazardous waste. A battery is a hazardous waste if it exhibits one or more of the characteristics identified in sections 33-24-02-10 through 33-24-02-14.

3. **Generation of waste batteries**.

   a. A used battery becomes a waste on the date it is discarded (for example, when sent for reclamation).

   b. An unused battery becomes a waste on the date the handler decides to discard it.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-703. Applicability - Pesticides.

1. **Pesticides covered under sections 33-24-05-700 through 33-24-05-799**. The requirements of sections 33-24-05-700 through 33-24-05-799 apply to persons managing pesticides, as described in section 33-24-01-04, meeting the following conditions, except those listed in subsection 2:

   a. Recalled pesticides that are:

      (1) Stocks of a suspended and canceled pesticide that are part of a voluntary or mandatory recall under federal Insecticide, Fungicide, and Rodenticide Act section 19(b), including, but not limited to, those owned by the registrant responsible for conducting the recall; or

      (2) Stocks of a suspended or canceled pesticide, or a pesticide that is not in compliance with federal Insecticide, Fungicide, and Rodenticide Act, that are part of a voluntary recall by the registrant.

   b. Stocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.

2. **Pesticides not covered under sections 33-24-05-700 through 33-24-05-799**. The requirements of sections 33-24-05-700 through 33-24-05-799 do not apply to persons managing the following pesticides:

   a. Recalled pesticides described in subdivision a of subsection 1, and unused pesticide products described in subdivision b of subsection 1, that are managed by farmers in compliance with section 33-24-03-40.

   b. Pesticides not meeting the conditions set forth in subsection 1. These pesticides must be managed in compliance with the hazardous waste regulations in chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149;

   c. Pesticides that are not wastes under chapter 33-24-02, including those that do not meet the criteria for waste generation in subsection 3 or those that are not wastes as described in subsection 4; and

   d. Pesticides that are not hazardous waste. A pesticide is a hazardous waste if it is listed in sections 33-24-02-15 through 33-24-02-19 or if it exhibits one or more of the characteristics identified in sections 33-24-02-10 through 33-24-02-14.

3. **When a pesticide becomes a waste**.

   a. A recalled pesticide described in subdivision a of subsection 1 becomes a waste on the first date on which both of the following conditions apply:

      (1) The generator of the recalled pesticide agrees to participate in the recall; and

      (2) The person conducting the recall decides to discard the pesticide (for example, burn the pesticide for energy recovery).

   b. An unused pesticide product described in subdivision b of subsection 1 becomes a waste on the date the generator decides to discard it.

4. **Pesticides that are not wastes**. The following pesticides are not wastes:

   a. Recalled pesticides described in subdivision a of subsection 1 provided that the person conducting the recall:

      (1) Has not made a decision to discard the pesticide (for example, burn for energy recovery). Until such a decision is made, the pesticide does not meet the definition of "solid waste" under section 33-24-02-02; thus the pesticide is not a hazardous waste and is not subject to hazardous waste requirements, including sections 33-24-05-700 through 33-24-05-799. This pesticide remains subject to the requirements of federal Insecticide, Fungicide, and Rodenticide Act; or

      (2) Has made a decision to use a management option that, under section 33-24-02-02, does not cause the pesticide to be a solid waste (for example, the selected option is use (other than use constituting disposal) or reuse (other than burning for energy recovery) or reclamation). Such a pesticide is not a solid waste and therefore is not a hazardous waste, and is not subject to hazardous waste requirements including sections 33-24-05-700 through 33-24-05-799. This pesticide, including a recalled pesticide that is exported to a foreign destination for use or reuse, remains subject to the requirements of federal Insecticide, Fungicide, and Rodenticide Act.

   b. Unused pesticide products described in subdivision b of subsection 1, if the generator of the unused pesticide product has not decided to discard them (for example, burn for

energy recovery). These pesticides remain subject to the requirements of federal Insecticide, Fungicide, and Rodenticide Act.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-704. Applicability - Mercury containing equipment.

1. **Mercury containing equipment covered under sections 33-24-05-700 through 33-24-05-799**. The requirements of sections 33-24-05-700 through 33-24-05-799 apply to persons managing mercury containing equipment, as described in section 33-24-01-04, except those listed in subsection 2.

2. **Mercury containing equipment not covered under sections 33-24-05-700 through 33-24-05-799**. The requirements of sections 33-24-05-700 through 33-24-05-799 do not apply to persons managing the following mercury containing equipment:

   a. Mercury containing equipment that is not yet a waste under chapter 33-24-02. Subsection 3 describes when mercury containing equipment becomes a waste;

   b. Mercury containing equipment that is not a hazardous waste. Mercury containing equipment is a hazardous waste if it exhibits one or more of the characteristics identified in sections 33-24-02-10 through 33-24-02-14 or is listed in sections 33-24-02-15 through 33-24-02-19; and

   c. Equipment and devices from which the mercury containing components have been removed.

3. **Generation of waste mercury containing equipment**.

   a. Used mercury containing equipment becomes a waste on the date it is discarded.

   b. Unused mercury containing equipment becomes a waste on the date the handler decides to discard it.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-705. Applicability - Lamps.

1. Lamps covered under sections 33-24-05-700 through 33-24-05-799. The requirements of sections 33-24-05-700 through 33-24-05-799 apply to persons managing lamps as described in section 33-24-01-04, except those listed in subsection 2.

2. Lamps not covered under sections 33-24-05-700 through 33-24-05-799. The requirements of sections 33-24-05-700 through 33-24-05-799 do not apply to persons managing the following lamps:

   a. Lamps that are not yet wastes under chapter 33-24-02 as provided in subsection 3.

   b. Lamps that are not hazardous waste. A lamp is a hazardous waste if it exhibits one or more of the characteristics identified in sections 33-24-02-10 through 33-24-02-14.

3. Generation of waste lamps.

   a. A used lamp becomes a waste on the date it is discarded.

b. An unused lamp becomes a waste on the date the handler decides to discard it.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-706. [Reserved]

History: Effective July 1, 1997; reserved December 1, 2003.

33-24-05-707. [Reserved]

33-24-05-708. Applicability - Household and conditionally exempt small quantity generator waste.

1. Persons managing the wastes listed below may, at their option, manage them under the requirements of sections 33-24-05-700 through 33-24-05-799:

   a. Household wastes that are exempt under subdivision a of subsection 2 of section 33-24-02-04 and are also of the same type as the universal wastes defined in section 33-24-01-04; or

   b. Conditionally exempt small quantity generator wastes that are exempt under section 33-24-02-05 and are also of the same type as the universal wastes defined in section 33-24-01-04.

2. Persons who commingle the wastes described in subdivisions a and b of subsection 1 together with universal waste regulated under sections 33-24-05-700 through 33-24-05-799 must manage the commingled waste under the requirements of sections 33-24-05-700 through 33-24-05-799.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-709. Definitions.

Terms that are defined in sections 33-24-01-04 and 33-24-02-01 and chapter 33-24-05 have the same meanings when used in sections 33-24-05-700 through 33-24-05-799.

1. "Ampule" means an airtight vial made of glass, plastic, metal, or any combination of these materials.

2. "FIFRA" means the Federal Insecticide, Fungicide and Rodenticide Act [7 United States Code 136-136y].

3. "Large quantity handler of universal waste" means a universal waste handler (as defined in section 33-24-01-04) who accumulates five thousand kilograms or more total of universal waste (batteries, pesticides, lamps, or mercury containing equipment, calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which the five thousand kilogram limit is met or exceeded.

4. "Small quantity handler of universal waste" means a universal waste handler (as defined in section 33-24-01-04) who does not accumulate five thousand kilograms or more total of universal waste (batteries, pesticides, lamps, or mercury containing equipment, calculated collectively) at any time.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-710. Applicability - Small quantity handlers of universal waste.

Sections 33-24-05-710 through 33-24-05-720 apply to small quantity handlers of universal waste.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-711. Prohibitions.

A small quantity handler of universal waste is:

1. Prohibited from disposing of universal waste; and

2. Prohibited from diluting or treating universal waste, except by responding to releases as provided by section 33-24-05-717; or by managing specific wastes as provided in section 33-24-05-713.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-712. Notification.

A small quantity handler of universal waste is not required to notify the department of universal waste handling activities.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-713. Waste management.

1. **Universal waste batteries**. A small quantity handler of universal waste must manage universal waste batteries in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

   a. A small quantity handler of universal waste must contain any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container must be closed, structurally sound, compatible with the contents of the battery and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

   b. A small quantity handler of universal waste may conduct the following activities as long as the casing of each individual battery cell is not breached and remains intact and closed (except that cells may be opened to remove electrolyte but must be immediately closed after removal):

      (1) Sorting batteries by type;

      (2) Mixing battery types in one container;

      (3) Discharging batteries so as to remove the electric charge;

(4) Regenerating used batteries;

(5) Disassembling batteries or battery packs into individual batteries or cells;

(6) Removing batteries from consumer products; or

(7) Removing electrolyte from batteries.

c. A small quantity handler of universal waste who removes electrolyte from batteries, or who generates other solid waste (for example, battery pack materials, discarded consumer products) as a result of the activities listed in subdivision b, must determine whether the electrolyte or other solid waste, or both, exhibit one or more of the characteristics of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14.

(1) If the electrolyte or other solid waste, or both, exhibit a characteristic of hazardous waste, it is subject to all applicable requirements of chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149. The handler is considered the generator of the hazardous electrolyte or other hazardous waste, or both, and is subject to the requirements of chapter 33-24-03.

(2) If the electrolyte or other solid waste is not hazardous, the handler may manage the waste in compliance with applicable federal, state, or local solid waste regulations.

2. **Universal waste pesticides**. A small quantity handler of universal waste must manage universal waste pesticides in a way that prevents releases of any universal waste or component of a universal waste to the environment. The universal waste pesticides must be contained in one or more of the following:

a. A container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions;

b. A container that does not meet the requirements of subdivision a, provided that the unacceptable container is overpacked in a container that does meet the requirements of subdivision a;

c. A tank that meets the requirements of sections 33-24-05-103 through 33-24-05-117, except subsection 3 of section 33-24-06-110 and sections 33-24-05-113 and 33-24-05-114; or

d. A transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

3. **Mercury containing equipment**. A small quantity handler of universal waste must manage universal waste mercury containing equipment in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

a. A small quantity handler of universal waste must place in a container any universal waste mercury containing equipment with noncontained elemental mercury or that shows evidence of leakage, spillage, or damage that could cause leakage under reasonable foreseeable conditions. The container must be closed, structurally sound, compatible with the contents of the device, must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and must be reasonably

designed to prevent the escape of mercury into the environment by volatilization or any other means.

b. A small quantity handler of universal waste may remove mercury containing ampules or other reservoirs from universal waste mercury containing equipment provided the handler:

(1) Removes and manages the ampules or other reservoirs in a manner designed to prevent breakage of the ampules or other reservoirs;

(2) Removes the ampules or other reservoirs only over or in a containment device (for example, a tray or pan sufficient to collect and contain any mercury released from an ampule or other reservoir in case of breakage);

(3) Ensures that a mercury cleanup system is readily available to immediately transfer any mercury resulting from spills or leaks from broken ampules or other reservoirs from that containment device to a container that meets the requirements of section 33-24-03-12;

(4) Immediately transfers any mercury resulting from spills or leaks from broken ampules or other reservoirs from the containment device to a container that meets the requirements of section 33-24-03-12;

(5) Ensures that the area in which ampules or other reservoirs are removed is well-ventilated and monitored to ensure compliance with applicable occupational safety and health administration exposure levels for mercury;

(6) Ensures that employees removing ampules or other reservoirs are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers;

(7) Stores removed ampules or other reservoirs in closed, nonleaking containers that are in good condition; and

(8) Packs removed ampules or other reservoirs in the container with packing materials adequate to prevent breakage during storage, handling, and transportation.

c. A small quantity handler of universal waste mercury containing equipment that does not contain an ampule or other reservoirs may remove the open original housing holding the mercury from universal waste mercury containing equipment provided the handler:

(1) Immediately seals the original housing holding the mercury with an airtight seal to prevent the release of any mercury to the environment; and

(2) Follows all requirements for removing ampules or other reservoirs and managing removed ampules or other reservoirs under subdivision b.

d. A small quantity handler of universal waste who removes mercury containing ampules or other reservoirs from mercury containing equipment or seals mercury from mercury containing equipment in its original housing must:

(1) Determine whether the following exhibit a characteristic of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14:

(a) Mercury or cleanup residues resulting from spills or leaks;

(b) Other solid waste generated as a result of the removal of mercury containing ampules or other reservoirs or housings (for example, the remaining mercury containing device); or

(c) Both.

(2) If the mercury, residues, or other solid waste, or any combination thereof, exhibits a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149. The handler is considered the generator of the mercury, residues, or other solid waste, or any combination thereof, and must manage it in compliance with chapter 33-24-03.

(3) If the mercury, residues, or other solid waste, or any combination thereof, is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state, or local solid waste regulations.

4. Lamps. A small quantity handler of universal waste must manage lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

a. A small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

b. A small quantity handler of universal waste must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage, or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-714. Labeling and marking.

A small quantity handler of universal waste must label or mark the universal waste to identify the type of universal waste as specified below:

1. Universal waste batteries (for example, each battery), or a container in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: "Universal Waste - Battery(ies)", or "Waste Battery(ies)", "Used Battery(ies)".

2. A container, (or multiple container package unit), tank, or transport vehicle or vessel in which recalled universal waste pesticides as described in subdivision a of subsection 1 of section 33-24-05-703 are contained must be labeled or marked clearly with:

a. The label that was on or accompanied the product as sold or distributed; and

b. The words "Universal Waste - Pesticide(s)" or "Waste - Pesticide(s)".

3. A container, tank, or transport vehicle or vessel in which unused pesticide products as described in subdivision b of subsection 1 of section 33-24-05-703 are contained must be labeled or marked clearly with:

   a. The following:

      (1) The label that was on the product when purchased, if still legible;

      (2) If using the labels described in paragraph 1 is not feasible, the appropriate label as required under department of transportation regulation 49 CFR part 172; or

      (3) If using the labels described in paragraphs 1 and 2 is not feasible, another label prescribed or designated by the waste pesticide collection program administered or recognized by the state; and

   b. The words "Universal Waste - Pesticide(s)" or "Waste - Pesticide(s)".

4. Universal waste mercury containing equipment (for example, each device), or a container in which the equipment is contained, must be labeled or marked clearly with any of the following phrases: "Universal Waste - Mercury Containing Equipment", "Waste Mercury Containing Equipment", or "Used Mercury Containing Equipment". A universal waste mercury containing thermostat or container containing only universal waste mercury containing thermostats may be labeled or marked clearly with any of the following phrases: "Universal Waste - Mercury Thermostat(s)", "Waste Mercury Thermostat(s)", or "Used Mercury Thermostat(s)".

5. Each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste - Lamp(s)", or "Waste Lamp(s)", or "Used Lamp(s)".

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-715. Accumulation time limits.

1. A small quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of subsection 2 are met.

2. A small quantity handler of universal waste may accumulate universal waste for longer than one year from the date the universal waste is generated, or received from another handler, if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.

3. A small quantity handler of universal waste who accumulates universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by:

   a. Placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received;

   b. Marking or labeling each individual item of universal waste (for example, each battery or mercury containing device) with the date it became a waste or was received;

c. Maintaining an inventory system onsite that identifies the date each universal waste became a waste or was received;

d. Maintaining an inventory system onsite that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received;

e. Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or

f. Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-716. Employee training.

A small quantity handler of universal waste shall inform all employees who handle or have responsibility for managing universal waste. The information must describe proper waste handling and emergency procedures appropriate for the type or types of universal waste handled at the facility.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-717. Response to releases.

1. A small quantity handler of universal waste shall immediately contain all releases of universal wastes and other residues from universal wastes.

2. A small quantity handler of universal waste shall determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements of chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149. The handler is considered the generator of the material resulting from the release, and must manage it in compliance with chapter 33-24-03.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-718. Offsite shipments.

1. A small quantity handler of universal waste is prohibited from sending or taking universal waste to a place other than another universal waste handler, a destination facility, or a foreign destination.

2. If a small quantity handler of universal waste self-transports universal waste offsite, the handler becomes a universal waste transporter for those self-transportation activities and must comply with the transporter requirements of sections 33-24-05-750 through 33-24-05-759 while transporting the universal waste.

3. If a universal waste being offered for offsite transportation meets the definition of hazardous materials under 49 CFR parts 171 through 180, a small quantity handler of universal waste must package, label, mark, and placard the shipment and prepare the proper shipping papers

in accordance with applicable department of transportation regulations under 49 CFR parts 172 through 180.

4. Prior to sending a shipment of universal waste to another universal waste handler, the originating small quantity handler shall ensure that the receiving handler agrees to receive the shipment.

5. If a small quantity handler of universal waste sends a shipment of universal waste to another handler or to a destination facility and the shipment is rejected by the receiving handler or destination facility, the originating handler shall either:

   a. Receive the universal waste back when notified that the shipment has been rejected; or

   b. Agree with the receiving handler on a destination facility to which the shipment will be sent.

6. A small quantity handler of universal waste may reject a shipment containing universal waste, or a portion of a shipment containing universal waste that the handler has received from another handler. If a handler rejects a shipment or a portion of a shipment, the receiving handler shall contact the originating handler to notify the originating handler of the rejection and to discuss reshipment of the load. The receiving handler must:

   a. Send the shipment back to the originating handler; or

   b. If agreed to by both the originating and receiving handler, send the shipment to a destination facility.

7. If a small quantity handler of universal waste receives a shipment containing hazardous waste that is not a universal waste, the handler shall immediately notify the department of the illegal shipment, and provide the name, address, and telephone number of the originating shipper. The department will provide instructions for managing the hazardous waste.

8. If a small quantity handler of universal waste receives a shipment of nonhazardous, nonuniversal waste, the handler may manage the waste in any way that is in compliance with applicable federal, state, or local waste regulations.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-719. Tracking universal waste shipments.

A small quantity handler of universal waste is not required to keep records of shipments of universal waste.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-720. Exports.

A small quantity handler of universal waste who sends universal waste to a foreign destination other than to those Organization for Economic Cooperation and Development countries specified in subdivision a of subsection 1 of section 33-24-03-25 (in which case the handler is subject to the requirements of sections 33-24-03-50 through 33-24-03-59) shall:

1. Comply with the requirements applicable to a primary exporter in section 33-24-03-20, subdivisions a through d and f of subsection 1 and subsection 2 of section 33-24-03-23, and section 33-24-03-24;

2. Export such universal waste only upon consent of the receiving country and in conformance with environmental protection agency acknowledgment of consent as defined in sections 33-24-03-17 through 33-24-03-29; and

3. Provide a copy of the environmental protection agency acknowledgment of consent for the shipment to the transporter transporting the shipment for export.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-721. [Reserved]

33-24-05-722. [Reserved]

33-24-05-723. [Reserved]

33-24-05-724. [Reserved]

33-24-05-725. [Reserved]

33-24-05-726. [Reserved]

33-24-05-727. [Reserved]

33-24-05-728. [Reserved]

33-24-05-729. [Reserved]

33-24-05-730. Applicability - Large quantity handlers of universal waste.

Sections 33-24-05-730 through 33-24-05-740 apply to large quantity handlers of universal waste.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-731. Prohibitions.

A large quantity handler of universal waste is:

1. Prohibited from disposing of universal waste; and

2. Prohibited from diluting or treating universal waste, except by responding to releases as provided by section 33-24-05-737, or by managing specific wastes as provided in section 33-24-05-733.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-732. Notification.

1. A large quantity handler of universal waste must:

   a. Except as provided in subdivisions b and c, send written notification of universal waste management activities to the department, and receive an identification number before meeting or exceeding the five thousand kilogram storage limit.

   b. A large quantity handler of universal waste who has already notified the department of the person's hazardous waste management activities and received an identification number is not required to renotify.

   c. A large quantity handler of universal waste who manages recalled universal waste pesticides as described in subdivision a of subsection 1 of section 33-24-05-703 and who has sent notification to the environmental protection agency as required by 40 CFR part 165 is not required to notify for those recalled universal waste pesticides.

2. This notification must include:

   a. The universal waste handler's name and mailing address;

   b. The name and business telephone number of the person at the universal waste handler's site who should be contacted regarding universal waste management activities;

   c. The address or physical location of the universal waste management activities;

   d. A list of all types of universal waste managed by the handler (for example, batteries, pesticides, mercury containing equipment, lamps); and

   e. A statement indicating that the handler is accumulating more than five thousand kilograms of universal waste at one time.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-733. Waste management.

1. **Universal waste batteries.** A large quantity handler of universal waste must manage universal waste batteries in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

   a. A large quantity handler of universal waste must contain any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container. The container must be closed, structurally sound, compatible with the contents of the battery and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

   b. A large quantity handler of universal waste may conduct the following activities as long as the casing of each individual battery cell is not breached and remains intact and closed (except that cells may be opened to remove electrolyte but must be immediately closed after removal):

(1) Sorting batteries by type;

(2) Mixing battery types in one container;

(3) Discharging batteries so as to remove the electric charge;

(4) Regenerating used batteries;

(5) Disassembling batteries or battery packs into individual batteries or cells;

(6) Removing batteries from consumer products; or

(7) Removing electrolyte from batteries.

c. A large quantity handler of universal waste who removes electrolyte from batteries, or who generates other solid waste (for example, battery pack materials, discarded consumer products) as a result of the activities listed in subdivision b, must determine whether the electrolyte or other solid waste, or both, exhibit one or more of the characteristics of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14.

(1) If the electrolyte or other solid waste, or both, exhibit a characteristic of hazardous waste, it is subject to all applicable requirements of chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149. The handler is considered the generator of the hazardous electrolyte or other hazardous waste and is subject to the requirements of chapter 33-24-03.

(2) If the electrolyte or other solid waste is not hazardous, the handler may manage the waste in compliance with applicable federal, state, or local solid waste regulations.

2. **Universal waste pesticides.** A large quantity handler of universal waste must manage universal waste pesticides in a way that prevents releases of any universal waste or component of a universal waste to the environment. The universal waste pesticides must be contained in one or more of the following:

a. A container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions;

b. A container that does not meet the requirements of subdivision a, provided that the unacceptable container is overpacked in a container that does meet the requirements of subdivision a;

c. A tank that meets the requirements of sections 33-24-05-103 through 33-24-05-117, except subsection 3 of section 33-24-06-110 and sections 33-24-05-113 and 33-24-05-114; or

d. A transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

3. **Mercury containing equipment.** A large quantity handler of universal waste must manage universal waste mercury containing equipment in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

a. A large quantity handler of universal waste must place in a container any universal waste mercury containing equipment with noncontained elemental mercury or that shows

evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. The container must be closed, structurally sound, compatible with the contents of the device, must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions and must be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.

b. A large quantity handler of universal waste may remove mercury containing ampules or other reservoirs from universal waste mercury containing equipment provided the handler:

(1) Removes and manages the ampules or other reservoirs in a manner designed to prevent breakage of the ampules or other reservoirs;

(2) Removes the ampules or other reservoirs only over or in a containment device (for example, tray or pan sufficient to collect and contain any mercury released from an ampule or other reservoir in case of breakage);

(3) Ensures that a mercury cleanup system is readily available to immediately transfer any mercury resulting from spills or leaks of broken ampules or other reservoirs from that containment device to a container that meets the requirements of section 33-24-03-12;

(4) Immediately transfers any mercury resulting from spills or leaks from broken ampules or other reservoirs from the containment device to a container that meets the requirements of section 33-24-03-12;

(5) Ensures that the area in which ampules or other reservoirs are removed is well-ventilated and monitored to ensure compliance with applicable occupational safety and health administration exposure levels for mercury;

(6) Ensures that employees removing ampules or other reservoirs are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers;

(7) Stores removed ampules or other reservoirs in closed, nonleaking containers that are in good condition; and

(8) Packs removed ampules or other reservoirs in the container with packing materials adequate to prevent breakage during storage, handling, and transportation.

c. A large quantity handler of universal waste mercury containing equipment that does not contain an ampule or other reservoirs may remove the open original housing holding the mercury from universal waste mercury containing equipment provided the handler:

(1) Immediately seals the original housing holding the mercury with an airtight seal to prevent the release of any mercury to the environment; and

(2) Follows all requirements for removing ampules and managing removed ampules under subdivision b.

d. A large quantity handler of universal waste who removes mercury containing ampules or other reservoirs from mercury containing equipment or seals mercury from mercury containing equipment in its original housing must:

(1) Determine whether the following exhibit a characteristic of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14:

(a) Mercury or cleanup residues resulting from spills or leaks;

(b) Other solid waste generated as a result of the removal of mercury containing ampules or other reservoirs or housings (for example, the remaining mercury containing device); or

(c) Both.

(2) If the mercury, residues, or other solid waste, or any combination thereof, exhibits a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149. The handler is considered the generator of the mercury, residues, or other solid waste, or any combination thereof, and must manage it in compliance with chapter 33-24-03.

(3) If the mercury, residues, or other solid waste, or any combination thereof, is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state, or local solid waste regulations.

4. **Lamps.** A large quantity handler of universal waste must manage lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

a. A large quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

b. A large quantity handler of universal waste must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage, or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-734. Labeling and marking.

A large quantity handler of universal waste must label or mark the universal waste to identify the type of universal waste as specified below:

1. Universal waste batteries (for example, each battery), or a container in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: "Universal Waste - Battery(ies)", or "Waste Battery(ies)", or "Used Battery(ies)".

2. A container (or multiple container package unit), tank, or transport vehicle or vessel in which recalled universal waste pesticides as described in subdivision a of subsection 1 of section 33-24-05-703 are contained must be labeled or marked clearly with:

a. The label that was on or accompanied the product as sold or distributed; and

b. The words "Universal Waste - Pesticide(s)" or "Waste - Pesticide(s)".

3. A container, tank, or transport vehicle or vessel in which unused pesticide products as described in subdivision b of subsection 1 of section 33-24-05-703 are contained must be labeled or marked clearly with:

   a. The following:

      (1) The label that was on the product when purchased, if still legible;

      (2) If using the labels described in paragraph 1 is not feasible, the appropriate label as required under department of transportation regulation 49 CFR part 172; or

      (3) If using the labels described in paragraphs 1 and 2 is not feasible, another label prescribed or designated by the waste pesticide collection program administered or recognized by the state; and

   b. The words "Universal Waste - Pesticide(s)" or "Waste - Pesticide(s)".

4. Mercury containing equipment (for example, each device), or a container in which the equipment is contained, must be labeled or marked clearly with any of the following phrases: "Universal Waste - Mercury Containing Equipment", "Waste Mercury Containing Equipment", or "Used Mercury Containing Equipment". A universal waste mercury containing thermostat or container containing only universal waste mercury containing thermostats may be labeled or marked clearly with any of the following phrases: "Universal Waste - Mercury Thermostat(s)", "Waste Mercury Thermostat(s)", or "Used Mercury Thermostat(s)".

5. Each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste - Lamp(s)", or "Waste Lamp(s)", or "Used Lamp(s)".

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-735. Accumulation time limits.

1. A large quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of subsection 2 are met.

2. A large quantity handler of universal waste may accumulate universal waste for longer than one year from the date the universal waste is generated, or received from another handler, if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.

3. A large quantity handler of universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by:

   a. Placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received;

   b. Marking or labeling each individual item of universal waste (for example, each battery or mercury containing equipment) with the date it became a waste or was received;

c. Maintaining an inventory system onsite that identifies the date each universal waste became a waste or was received;

d. Maintaining an inventory system onsite that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received;

e. Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or

f. Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-736. Employee training.

A large quantity handler of universal waste shall ensure all employees who handle or have responsibility for managing universal waste are thoroughly familiar with proper waste handling and emergency procedures appropriate for the type or types of universal waste handled at the facility, and relative to their responsibilities during normal facility operations and emergencies.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-737. Response to releases.

1. A large quantity handler of universal waste shall immediately contain all releases of universal wastes and other residues from universal wastes.

2. A large quantity handler of universal waste shall determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements of chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149. The handler is considered the generator of the material resulting from the release, and is subject to chapter 33-24-03.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-738. Offsite shipments.

1. A large quantity handler of universal waste is prohibited from sending or taking universal waste to a place other than another universal waste handler, a destination facility, or a foreign destination.

2. If a large quantity handler of universal waste self-transports universal waste offsite, the handler becomes a universal waste transporter for those self-transportation activities and must comply with the transporter requirements of sections 33-24-05-750 through 33-24-05-759 while transporting the universal waste.

3. If a universal waste being offered for offsite transportation meets the definition of hazardous materials under 49 CFR parts 171 through 180, a large quantity handler of universal waste

must package, label, mark, and placard the shipment and prepare the proper shipping papers in accordance with applicable department of transportation regulations under 49 CFR parts 172 through 180.

4. Prior to sending a shipment of universal waste to another universal waste handler, the originating handler shall ensure that the receiving handler agrees to receive the shipment.

5. If a large quantity handler of universal waste sends a shipment of universal waste to another handler or to a destination facility and the shipment is rejected by the receiving handler or destination facility, the originating handler shall either:

   a. Receive the universal waste back when notified that the shipment has been rejected; or

   b. Agree with the receiving handler on a destination facility to which the shipment will be sent.

6. A large quantity handler of universal waste may reject a shipment containing universal waste, or a portion of a shipment containing universal waste that the handler has received from another handler. If a handler rejects a shipment or a portion of a shipment, the receiving handler shall contact the originating handler to notify the originating handler of the rejection and to discuss reshipment of the load. The receiving handler must:

   a. Send the shipment back to the originating handler; or

   b. If agreed to by both the originating and receiving handler, send the shipment to a destination facility.

7. If a large quantity handler of universal waste receives a shipment containing hazardous waste that is not a universal waste, the handler shall immediately notify the department of the illegal shipment, and provide the name, address, and telephone number of the originating shipper. The department will provide instructions for managing the hazardous waste.

8. If a large quantity handler of universal waste receives a shipment of nonhazardous, nonuniversal waste, the handler may manage the waste in any way that is in compliance with applicable federal, state, or local solid waste regulations.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-739. Tracking universal waste shipments.

1. **Receipt of shipments.** A large quantity handler of universal waste shall keep a record of each shipment of universal waste received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste received must include the following information:

   a. The name and address of the originating universal waste handler or foreign shipper from whom the universal waste was sent;

   b. The quantity of each type of universal waste received (for example, batteries, pesticides, mercury containing equipment, lamps); and

   c. The date of receipt of the shipment of universal waste.

2. **Shipments offsite.** A large quantity handler of universal waste must keep a record of each shipment of universal waste sent from the handler to other facilities. The record may take the

form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste sent must include the following information:

a. The name and address of the universal waste handler, destination facility, or foreign destination to whom the universal waste was sent;

b. The quantity of each type of universal waste sent (for example, batteries, pesticides, mercury containing equipment, lamps); and

c. The date the shipment of universal waste left the facility.

3. **Record retention.**

a. A large quantity handler of universal waste shall retain the records described in subsection 1 for at least three years from the date of receipt of the shipment of universal waste.

b. A large quantity handler of universal waste shall retain the records described in subsection 2 for at least three years from the date a shipment of universal waste left the facility.

c. The retention period for all records is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the department.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-740. Exports.

A large quantity handler of universal waste who sends universal waste to a foreign destination other than those Organization for Economic Cooperation and Development countries specified in subdivision a of subsection 1 of section 33-24-03-25 (in which case the handler is subject to the requirements of sections 33-24-03-50 through 33-24-03-59) shall:

1. Comply with the requirements applicable to a primary exporter in section 33-24-03-20, subdivisions a through d and f of subsection 1 and subsection 2 of section 33-24-03-23, and section 33-24-03-24;

2. Export such universal waste only upon consent of the receiving country and in conformance with environmental protection agency acknowledgment of consent as defined in sections 33-24-03-17 through 33-24-03-29; and

3. Provide a copy of the environmental protection agency acknowledgment of consent for the shipment to the transporter transporting the shipment for export.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-741. [Reserved]

History: Effective July 1, 1997; reserved December 1, 2003.

33-24-05-742. [Reserved]

History: Effective July 1, 1997; reserved December 1, 2003.

33-24-05-743. [Reserved]

History: Effective July 1, 1997; reserved December 1, 2003.

33-24-05-744. [Reserved]

History: Effective July 1, 1997; reserved December 1, 2003.

33-24-05-745. [Reserved]

History: Effective July 1, 1997; reserved December 1, 2003.

33-24-05-746. [Reserved]

History: Effective July 1, 1997; reserved December 1, 2003.

33-24-05-747. [Reserved]

33-24-05-748. [Reserved]

33-24-05-749. [Reserved]

33-24-05-750. Applicability - Universal waste transporters.

Sections 33-24-05-750 through 33-24-05-759 apply to all transporters of universal waste.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-751. Prohibitions.

A universal waste transporter is:

1. Prohibited from disposing of universal waste; and

2. Prohibited from diluting or treating universal waste, except by responding to releases as provided by section 33-24-05-754.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-752. Waste management.

1. A universal waste transporter shall comply with all applicable United States department of transportation regulations in 49 CFR parts 171 through 180 for transport of any universal waste that meets the definition of hazardous material in 49 CFR 171.8. For purposes of the department of transportation regulations, a material is considered a hazardous waste if it is subject to the hazardous waste manifest requirements specified in chapter 33-24-03. Because universal waste does not require a hazardous waste manifest, it is not considered a hazardous waste under the department of transportation regulations.

2. Some universal waste materials are regulated by the department of transportation as hazardous materials because they meet the criteria for one or more hazard classes specified in 49 CFR 173.2. As universal waste shipments do not require a manifest under chapter

33-24-03, they may not be described by the department of transportation proper shipping name "hazardous waste (l) or (s), n.o.s.", nor may the hazardous material's proper shipping name be modified by adding the word "waste".

3. All universal waste transporters shall comply with the solid waste transportation permitting requirements contained in section 33-20-02.1-01.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-753. Storage time limits.

1. A universal waste transporter may only store the universal waste at a universal waste transfer facility for ten days or less.

2. If a universal waste transporter stores universal waste for more than ten days, the universal waste transporter becomes a universal waste handler and must comply with the requirements of sections 33-24-05-710 through 33-24-05-740, as applicable, while storing the universal waste.

3. A universal waste transporter must keep records for each shipment of universal waste transported. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste sent must include the following information:

   a. The name and address of the universal waste generator or handler originating the shipment and the subsequent handler, destination facility, or foreign destination to whom the universal waste was sent;

   b. The quantity of each type of universal waste sent (for example, batteries, pesticides, mercury containing equipment); and

   c. The date the universal waste transporter accepted the shipment of universal waste for transportation.

4. Record retention. A universal waste transporter shall retain the records described in subsection 3 for at least three years from the date of delivery of the shipment of universal waste to another handler, destination facility, or foreign destination.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-754. Response to releases.

1. A universal waste transporter must immediately contain all releases of universal wastes and other residues from universal wastes.

2. A universal waste transporter must determine whether any material resulting from the release is hazardous waste, and if so, is subject to all applicable requirements of chapters 33-24-01 through 33-24-04, chapter 33-24-06, sections 33-24-05-01 through 33-24-05-559, and 33-24-05-800 through 33-24-05-1149. If the waste is determined to be hazardous waste, the transporter is subject to chapter 33-24-03.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-755. Offsite shipments.

1. A universal waste transporter is prohibited from transporting the universal waste to a place other than a universal waste handler, a destination facility, or a foreign destination.

2. If the universal waste being shipped offsite meets the department of transportation's definition of hazardous materials in 49 CFR 171.8, the shipment must be properly described on a shipping paper in accordance with the applicable department of transportation regulations under 49 CFR part 172.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-756. Exports.

A universal waste transporter transporting a shipment of universal waste to a foreign destination other than those Organization for Economic Cooperation and Development countries specified in subdivision a of subsection 1 of section 33-24-03-25 (in which case the handler is subject to the requirements of sections 33-24-03-50 through 33-24-03-59) may not accept a shipment if the transporter knows the shipment does not conform to the environmental protection agency acknowledgment of consent. In addition, the transporter must ensure that:

1. A copy of the environmental protection agency acknowledgment of consent accompanies the shipment; and

2. The shipment is delivered to the facility designated by the person initiating the shipment.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-757. [Reserved]

33-24-05-758. [Reserved]

33-24-05-759. [Reserved]

33-24-05-760. Applicability - Destination facilities.

1. The owner or operator of a destination facility (as defined in section 33-24-01-04) is subject to all applicable requirements of sections 33-24-05-01 through 33-24-05-559 and 33-24-05-800 through 33-24-05-929 and chapters 33-24-06 and 33-24-07, and the notification requirement under section 33-24-03-03.

2. The owner or operator of a destination facility that recycles a particular universal waste without storing that universal waste before it is recycled must comply with subdivision b of subsection 3 of section 33-24-02-06.

History: Effective July 1, 1997; amended effective December 1, 2003; January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-761. Offsite shipments.

1. The owner or operator of a destination facility is prohibited from sending or taking universal waste to a place other than a universal waste handler, another destination facility, or foreign destination.

2. The owner or operator of a destination facility may reject a shipment containing universal waste or a portion of a shipment containing universal waste. If the owner or operator of the destination facility rejects a shipment or a portion of a shipment, the destination facility must contact the shipper to notify the shipper of the rejection and to discuss reshipment of the load. The owner or operator of the destination facility shall:

   a. Send the shipment back to the original shipper; or

   b. If agreed to by both the shipper and the owner or operator of the destination facility, send the shipment to another destination facility.

3. If the owner or operator of a destination facility receives a shipment containing hazardous waste that is not a universal waste, the owner or operator of the destination facility shall immediately notify the department of the illegal shipment, and provide the name, address, and telephone number of the originating shipper. The department will provide instructions for managing the hazardous waste.

4. If the owner or operator of a destination facility receives a shipment of nonhazardous, nonuniversal waste, the owner or operator of the destination facility may manage the waste in any way that is in compliance with applicable federal or state solid waste regulations.

History: Effective July 1, 1997; amended effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-762. Tracking universal waste shipments.

1. The owner or operator of a destination facility shall keep a record of each shipment of universal waste received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of universal waste received must include the following information:

   a. The name and address of the universal waste handler, destination facility, or foreign shipper from whom the universal waste was sent;

   b. The quantity of each type of universal waste received (for example, batteries, pesticides, mercury containing equipment); and

   c. The date of receipt of the shipment of universal waste.

2. The owner or operator of a destination facility must retain the records described in subsection 1 for at least three years from the date of receipt of a shipment of universal waste.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-763. [Reserved]

33-24-05-764. [Reserved]

33-24-05-765. [Reserved]

33-24-05-766. [Reserved]

33-24-05-767. [Reserved]

33-24-05-768. [Reserved]

33-24-05-769. [Reserved]

33-24-05-770. Imports.

Persons managing universal waste that is imported from a foreign country into the United States are subject to the applicable requirements of sections 33-24-05-700 through 33-24-05-799, immediately after the waste enters the United States, as indicated in subsections 1 through 3:

1. A universal waste transporter is subject to the universal waste transporter requirements of sections 33-24-05-750 through 33-24-05-759.

2. A universal waste handler is subject to the universal waste handler requirements of sections 33-24-05-710 through 33-24-05-740, as applicable.

3. An owner or operator of a destination facility is subject to the destination facility requirements of sections 33-24-05-760 through 33-24-05-762.

4. Persons managing universal waste that is imported from an Organization for Economic Cooperation and Development country as specified in subdivision a of subsection 1 of section 33-24-03-25 are subject to subsections 1 through 3, in addition to the requirements of sections 33-24-03-50 through 33-24-03-59.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-771. [Reserved]

33-24-05-772. [Reserved]

33-24-05-773. [Reserved]

33-24-05-774. [Reserved]

33-24-05-775. [Reserved]

33-24-05-776. [Reserved]

33-24-05-777. [Reserved]

33-24-05-778. [Reserved]

33-24-05-779. [Reserved]

33-24-05-780. Petitions to include other wastes under sections 33-24-05-700 through 33-24-05-799.

1. Any person seeking to add a hazardous waste or a category of hazardous waste to sections 33-24-05-700 through 33-24-05-799 may petition for a regulatory amendment under sections 33-24-05-780 through 33-24-05-781, 33-24-01-06, and 33-24-01-08.

2. To be successful, the petitioner must demonstrate to the satisfaction of the department that regulation under the universal waste regulations of sections 33-24-05-700 through 33-24-05-799 is appropriate for the waste or category of waste; will improve management practices for the waste or category of waste; and will improve implementation of the hazardous waste program. The petition must include the information required by subsection 2 of section 33-24-01-06. The petition should also address as many of the factors listed in section 33-24-05-781 as are appropriate for the waste or waste category addressed in the petition.

3. The department will evaluate petitions using the factors listed in section 33-24-05-781. The department will grant or deny a petition using the factors listed in section 33-24-05-781. The decision will be based on the weight of evidence showing that regulation under sections 33-24-05-700 through 33-24-05-799 is appropriate for the waste or category of waste, will improve management practices for the waste of category of waste, and will improve implementation of the hazardous waste program.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-781. Factors for petitions to include other wastes under sections 33-24-05-700 through 33-24-05-799.

1. The waste or category of waste, as generated by a wide variety of generators, is listed in sections 33-24-02-15 through 33-24-02-19, or (if not listed) a proportion of the waste stream exhibits one or more characteristics of hazardous waste identified in sections 33-24-02-10 through 33-24-02-14. (When a characteristic waste is added to the universal waste regulations of sections 33-24-05-700 through 33-24-05-799 by using a generic name to identify the waste category (for example, batteries), the definition of universal waste in section 33-24-01-04 will be amended to include only the hazardous waste portion of the waste category (for example, hazardous waste batteries).) Thus, only the portion of the waste stream that does exhibit one or more characteristics (therefore, is hazardous waste) is subject to the universal waste regulations of sections 33-24-05-700 through 33-24-05-799;

2. The waste or category of waste is not exclusive to a specific industry or group of industries, is commonly generated by a wide variety of types of establishments (including, for example, households, retail and commercial businesses, office complexes, conditionally exempt small quantity generators, small businesses, government organizations, as well as large industrial facilities);

3. The waste or category of waste is generated by a large number of generators (for example, more than one thousand nationally) and is frequently generated in relatively small quantity by each generator;

4. Systems to be used for collecting the waste or category of waste (including packaging, marking, and labeling practices) would ensure close stewardship of the waste;

5. The risk posed by the waste or category of waste during accumulation and transport is relatively low compared to other hazardous wastes, and specific management standards proposed or referenced by the petitioner (for example, waste management requirements appropriate to be added to sections 33-24-05-713, 33-24-05-733, and 33-24-05-752; or applicable department of transportation requirements) would be protective of human health and the environment during accumulation and transport;

6. Regulation of the waste or category of waste under sections 33-24-05-700 through 33-24-05-799 will increase the likelihood that the waste will be diverted from the nonhazardous waste management systems (for example, the municipal waste stream, nonhazardous industrial or commercial waste stream, municipal sewer, or stormwater systems) to recycling, treatment, or disposal in compliance with the hazardous waste management rules;

7. Regulation of the waste or category of waste under sections 33-24-05-700 through 33-24-05-799 will improve implementation of the hazardous waste regulatory program; and

8. Such other factors as may be appropriate.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-782. [Reserved]

33-24-05-783. [Reserved]

33-24-05-784. [Reserved]

33-24-05-785. [Reserved]

33-24-05-786. [Reserved]

33-24-05-787. [Reserved]

33-24-05-788. [Reserved]

33-24-05-789. [Reserved]

33-24-05-790. [Reserved]

33-24-05-791. [Reserved]

33-24-05-792. [Reserved]

33-24-05-793. [Reserved]

33-24-05-794. [Reserved]

33-24-05-795. [Reserved]

33-24-05-796. [Reserved]

33-24-05-797. [Reserved]

33-24-05-798. [Reserved]

33-24-05-799. [Reserved]

33-24-05-800. Applicability - Military munitions.

The requirements of sections 33-24-05-800 through 33-24-05-819 apply to owners or operators who store munitions and explosive hazardous wastes, except as section 33-24-05-01 provides otherwise. (Note: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (sections 33-24-05-475 through 33-24-05-500), tanks (sections 33-24-05-103 through 33-24-05-117), or containers (sections 33-24-05-89 through 33-24-05-102); see section 33-24-05-825 for storage of waste military munitions.)

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-801. Design and operating standards.

1. Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls, and monitoring, that:

    a. Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated runoff to the soil, ground water, surface water, and atmosphere;

    b. Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;

    c. For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;

    d. For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (for example, additional containment, such as overpacking, or removal from the waste area); and

    e. Provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.

2. Hazardous waste munitions and explosives stored under sections 33-24-05-800 through 33-24-05-819 may be stored in one of the following:

    a. Earth-covered magazines. Earth-covered magazines must be:

(1) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;

(2) Designed and constructed:

(a) To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

(b) To provide working space for personnel and equipment in the unit; and

(c) To withstand movement activities that occur in the unit; and

(3) Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

b. Aboveground magazines. Aboveground magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

c. Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

3. Hazardous waste munitions and explosives must be stored in accordance with a standard operating procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of section 33-24-05-05, the preparedness and prevention procedures of sections 33-24-05-15 through 33-24-05-25, and the contingency plan and emergency procedures requirements of sections 33-24-05-26 through 33-24-05-36, then these procedures will be used to fulfill those requirements.

4. Hazardous waste munitions and explosives must be packaged to ensure safety in handling and storage.

5. Hazardous waste munitions and explosives must be inventoried at least annually.

6. Hazardous waste munitions and explosives and their storage units must be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-802. Closure and postclosure care.

1. At closure of a magazine or unit which stored hazardous waste under sections 33-24-05-800 through 33-24-05-819, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless subsection 4 of section 33-24-02-03 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units must meet all of the requirements specified in sections 33-24-05-59 through 33-24-05-88, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection 1, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, owner or operator must close the facility and perform postclosure care in accordance with the closure and postclosure requirements that apply to landfills in section 33-24-05-180.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-803. [Reserved]

33-24-05-804. [Reserved]

33-24-05-805. [Reserved]

33-24-05-806. [Reserved]

33-24-05-807. [Reserved]

33-24-05-808. [Reserved]

33-24-05-809. [Reserved]

33-24-05-810. [Reserved]

33-24-05-811. [Reserved]

33-24-05-812. [Reserved]

33-24-05-813. [Reserved]

33-24-05-814. [Reserved]

33-24-05-815. [Reserved]

33-24-05-816. [Reserved]

33-24-05-817. [Reserved]

33-24-05-818. [Reserved]

33-24-05-819. [Reserved]

33-24-05-820. Applicability.

1. The regulations in sections 33-24-05-820 through 33-24-05-849 identify when military munitions become a solid waste, and, if these wastes are also hazardous under sections 33-24-05-820 through 33-24-05-849 or chapter 33-24-02, the management standards that apply to these wastes.

2. Unless otherwise specified in sections 33-24-05-820 through 33-24-05-849, all applicable requirements in article 33-24 apply to waste military munitions.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-821. Definitions.

In addition to the definitions in section 33-24-01-04, the following definitions apply to sections 33-24-05-820 through 33-24-05-849:

1. "Active range" means a military range that is currently in service and is being regularly used for range activities.

2. "Chemical agents and munitions" are defined as in 50 U.S.C. section 1521(j)(1).

3. "Inactive range" means a military range that is not currently being used, but that is still under military control and considered by the military to be a potential range area, and that has not been put to a new use that is incompatible with range activities.

4. "Military" means the department of defense, the armed services, coast guard, national guard, department of energy, or other parties under contract or acting as an agent for the foregoing, who handle military munitions.

5. "Military range" means designated land and water areas set aside, managed, and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas.

6. "Unexploded ordnance" means military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design, or any other cause.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-822. Definition of solid waste.

1. A military munition is not a solid waste when:

   a. Used for its intended purpose, including:

      (1) Use in training military personnel or explosives and munitions emergency response specialists (including training in proper destruction of unused propellant or other munitions);

(2) Use in research, development, testing, and evaluation of military munitions, weapons, or weapon systems; or

(3) Recovery, collection, and on-range destruction of unexploded ordnance and munitions fragments during range clearance activities at active or inactive ranges. However, "use for intended purpose" does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.

b. An unused munition, or component thereof, is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involve use constituting disposal (as defined in subdivision a of subsection 3 of section 33-24-02-02) or burning for energy recovery (as defined in subdivision b of subsection 3 of section 33-24-02-02).

2. An unused military munition is a solid waste when any of the following occurs:

a. The munition is abandoned by being disposed of, burned, detonated (except during intended use as specified in subsection 1), incinerated, or treated prior to disposal;

b. The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal;

c. The munition is deteriorated or damaged (for example, the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes; or

d. The munition has been declared a solid waste by an authorized military official.

3. A used or fired military munition is a solid waste:

a. When transported off-range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment prior to disposal; or

b. If recovered, collected, and then disposed of by burial, or landfilling either on or off a range.

4. For purposes of Resource Conservation and Recovery Act section 1004(27) or subsection 18 of North Dakota Century Code section 23-20.3-02, a used or fired military munition is a solid waste, and, therefore, is potentially subject to corrective action authorities under Resource Conservation and Recovery Act sections 3004(u) and (v), and 3008(h) or sections 33-24-05-57 and 33-24-05-58, or imminent and substantial endangerment authorities under section 7003, or North Dakota Century Code section 23-20.3-08, if the munition lands offrange and is not promptly rendered safe or retrieved, or both. Any imminent and substantial threats associated with any remaining material must be addressed. If remedial action is infeasible, the operator of the range must maintain a record of the event for as long as any threat remains. The record must include the type of munition and its location (to the extent the location is known).

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-823. Standards applicable to the transportation of solid waste military munitions.

1. Criteria for hazardous waste regulation of waste nonchemical military munitions in transportation.

   a. Waste military munitions that are being transported and that exhibit a hazardous waste characteristic or are listed as hazardous waste under chapter 33-24-02 are listed or identified as a hazardous waste (and thus are subject to regulation under article 33-24), unless all the following conditions are met:

      (1) The waste military munitions are not chemical agents or chemical munitions;

      (2) The waste military munitions must be transported in accordance with the department of defense shipping controls applicable to the transport of military munitions;

      (3) The waste military munitions must be transported from a military owned or operated installation to a military owned or operated treatment, storage, or disposal facility; and

      (4) The transporter of the waste must provide oral notice to the department within twenty-four hours from the time the transporter becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of this subdivision that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within five days from the time the transporter becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of this subdivision.

   b. If any waste military munitions shipped under subdivision a are not received by the receiving facility within forty-five days of the day the waste was shipped, the owner or operator of the receiving facility must report this nonreceipt to the department within five days.

   c. The exemption in subdivision a from regulation as hazardous waste shall apply only to the transportation of nonchemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to storage, treatment, or disposal.

   d. The conditional exemption in subdivision a applies only so long as all of the conditions in subdivision a are met.

2. Reinstatement of exemption. If any waste military munition loses its exemption under subdivision a of subsection 1, an application may be filed with the department for reinstatement of the exemption from hazardous waste transportation regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of subdivision a of subsection 1. If the department finds that reinstatement of the exemption is appropriate based on factors such as the transporter's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the department may reinstate the exemption under subdivision a of subsection 1. If the department does not take action on the reinstatement application within sixty days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the department may terminate a conditional exemption reinstated by default in the preceding sentence if the department finds that reinstatement is inappropriate based on factors such as the transporter's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the exemption under subdivision a of subsection 1, the department may

specify additional conditions as are necessary to ensure and document proper transportation to protect human health and the environment.

3. Amendments to department of defense shipping controls. The department of defense shipping controls applicable to the transport of military munitions referenced in paragraph 2 of subdivision a of subsection 1 are government bill of lading (GSA standard form 1109), requisition tracking form (DD form 1348), the signature and tally record (DD form 1907), special instructions for motor vehicle drivers (DD form 836), and the motor vehicle inspection report (DD form 626) in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the department of defense shipping controls shall become effective for purposes of subdivision a of subsection 1 on the date the department of defense publishes notice in the federal register that the shipping controls referenced in paragraph 2 of subdivision a of subsection 1 have been amended.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-824. Standards applicable to emergency responses.

Explosives and munitions emergencies involving military munitions or explosives are subject to subsection 8 of section 33-24-03-01, subsection 5 of section 33-24-04-01, paragraph 1 of subdivision g of subsection 6 of section 33-24-05-01, 40 CFR 265.1(c)(11) as incorporated by reference at subsection 5 of section 33-24-06-16, and paragraph 9 of subdivision b of subsection 2 of section 33-24-06-01, and subsection 1 of section 33-24-06-19.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-825. Standards applicable to the storage of solid waste military munitions.

1. Criteria for hazardous waste regulation of waste nonchemical military munitions in storage.

   a. Waste military munitions in storage that exhibit a hazardous waste characteristic or are listed as hazardous waste under chapter 33-24-02 are listed or identified as a hazardous waste (and thus are subject to regulation under article 33-24), unless all the following conditions are met:

      (1) The waste military munitions are not chemical agents or chemical munitions.

      (2) The waste military munitions must be subject to the jurisdiction of the department of defense explosives safety board.

      (3) The waste military munitions must be stored in accordance with the department of defense explosives safety board storage standards applicable to waste military munitions.

      (4) Within ninety days of August 12, 1997, or within ninety days of when a storage unit is first used to store waste military munitions, whichever is later, the owner or operator must notify the department of the location of any waste storage unit used to store waste military munitions for which the conditional exemption in this subdivision is claimed.

      (5) The owner or operator must provide oral notice to the department within twenty-four hours from the time the owner or operator becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of this subdivision that

may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within five days from the time the owner or operator becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of this subdivision.

(6) The owner or operator must inventory the waste military munitions at least annually, must inspect the waste military munitions at least quarterly for compliance with the conditions of this subdivision, and must maintain records of the findings of these inventories and inspections for at least three years.

(7) Access to the stored waste military munitions must be limited to appropriately trained and authorized personnel.

b. The conditional exemption in subdivision a from regulation as hazardous waste shall apply only to the storage of nonchemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to transportation, treatment, or disposal.

c. The conditional exemption in subdivision a applies only so long as all of the conditions in subdivision a are met.

2. Notice of termination of waste storage. The owner or operator must notify the department when a storage unit identified in paragraph 4 of subdivision a of subsection 1 will no longer be used to store waste military munitions.

3. Reinstatement of conditional exemption. If any waste military munition loses its conditional exemption under subdivision a of subsection 1, an application may be filed with the department for reinstatement of the conditional exemption from hazardous waste storage regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of subdivision a of subsection 1. If the department finds that reinstatement of the conditional exemption is appropriate based on factors such as the owner's or operator's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the department may reinstate the conditional exemption under subdivision a of subsection 1. If the department does not take action on the reinstatement application within sixty days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the department may terminate a conditional exemption reinstated by default in the preceding sentence if the department finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the conditional exemption under subdivision a of subsection 1, the department may specify additional conditions as are necessary to ensure and document proper storage to protect human health and the environment.

4. Waste chemical munitions.

a. Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under chapter 33-24-02 are listed or identified as a hazardous waste and shall be subject to the applicable regulatory requirements of article 33-24.

b. Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under chapter 33-24-02 are not subject to the storage prohibition in section 33-24-05-290.

5. Amendments to department of defense explosives safety board storage standards. The department of defense explosives safety board storage standards applicable to waste military munitions, referenced in paragraph 3 of subdivision a of subsection 1, are department of defense 6055.9-STD ("DOD ammunition and explosive safety standards"), in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the department of defense explosives safety board storage standards shall become effective for purposes of subdivision a of subsection 1 on the date the department of defense publishes notice in the federal register that the department of defense explosives safety board standards referenced in subdivision a of subsection 1 have been amended.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-826. Standards applicable to the treatment and disposal of waste military munitions.

The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in article 33-24.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-827. [Reserved]

33-24-05-828. [Reserved]

33-24-05-829. [Reserved]

33-24-05-830. [Reserved]

33-24-05-831. [Reserved]

33-24-05-832. [Reserved]

33-24-05-833. [Reserved]

33-24-05-834. [Reserved]

33-24-05-835. [Reserved]

33-24-05-836. [Reserved]

33-24-05-837. [Reserved]

33-24-05-838. [Reserved]

33-24-05-839. [Reserved]

33-24-05-840. [Reserved]

33-24-05-841. [Reserved]

33-24-05-842. [Reserved]

33-24-05-843. [Reserved]

33-24-05-844. [Reserved]

33-24-05-845. [Reserved]

33-24-05-846. [Reserved]

33-24-05-847. [Reserved]

33-24-05-848. [Reserved]

33-24-05-849. [Reserved]

33-24-05-850. Definitions applicable to the conditional exemption for low-level mixed waste storage, treatment, transportation, and disposal.

For sections 33-24-05-850 through 33-24-05-929, use the following special definitions:

1. "Agreement state" means a state that has entered into an agreement with the nuclear regulatory commission under subsection 274b of the Atomic Energy Act of 1954, as amended [68 Stat. 919], to assume responsibility for regulating within its borders byproduct, source, or special nuclear material in quantities not sufficient to form a critical mass. North Dakota is an agreement state.

2. "Certified delivery" means certified mail with return receipt requested, or equivalent courier service, or other means, that provides the sender with a receipt confirming delivery.

3. "Eligible naturally occurring or accelerator-produced radioactive material, or both (NARM)" is NARM that is eligible for the transportation and disposal conditional exemption. It is a NARM waste that contains hazardous waste, meets the waste acceptance criteria of, and is allowed by applicable state NARM regulations to be disposed of at a low-level radioactive waste disposal facility licensed in accordance with 10 CFR part 61 or nuclear regulatory commission agreement state equivalent regulations.

4. "Exempted waste" means a waste that meets the eligibility criteria in section 33-24-05-856 and meets all of the conditions in section 33-24-05-857, or meets the eligibility criteria in section 33-24-05-890 and complies with all the conditions in section 33-24-05-895. Such waste is conditionally exempted from the regulatory definition of hazardous waste described in section 33-24-02-03.

5. "Hazardous waste" means any material which is defined to be hazardous waste in accordance with section 33-24-02-03.

6. "Land disposal restriction treatment standards" means treatment standards, under sections 33-24-05-250 through 33-24-05-299, that a hazardous waste must meet before it can be disposed of in a permitted hazardous waste land disposal unit.

7. "License" means a license issued by the nuclear regulatory commission, or nuclear regulatory commission agreement state, to users that manage radionuclides regulated by nuclear regulatory commission, or nuclear regulatory commission agreement states, under authority of the Atomic Energy Act of 1954, as amended.

8. "Low-level mixed waste" is a waste that contains both low-level radioactive waste and hazardous waste.

9. "Low-level radioactive waste" is a radioactive waste which contains source, special nuclear, or byproduct material, and which is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11e.(2) of the Atomic Energy Act. See also nuclear regulatory commission definition of "waste" at 10 CFR 61.2.

10. "Mixed waste" means a waste that contains both hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954, as amended.

11. "Naturally occurring radioactive material, accelerator-produced radioactive material, or both (NARM)" means radioactive materials that:

    a. Are naturally occurring and are not source, special nuclear, or byproduct materials (as defined by the Atomic Energy Act); or

    b. Are produced by an accelerator.

    NARM is regulated by the states under state law, or by department of energy (as authorized by the Atomic Energy Act) under department of energy orders.

12. "Nuclear regulatory commission" means the United States nuclear regulatory commission.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-851. [Reserved]

33-24-05-852. [Reserved]

33-24-05-853. [Reserved]

33-24-05-854. [Reserved]

33-24-05-855. Storage and treatment conditional exemption and eligibility.

The storage and treatment conditional exemption exempts certain low-level mixed waste from the regulatory definition of hazardous waste in section 33-24-02-03 if the waste meets the eligibility criteria in section 33-24-05-856 and the generator, treater, or other handler meets the conditions in section 33-24-05-857.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-856. Eligible wastes for the storage and treatment conditional exemption.

Low-level mixed waste, defined in section 33-24-05-850, is eligible for this conditional exemption if it is generated and managed by a generator, treater, or other handler under a single nuclear regulatory commission or nuclear regulatory commission agreement state license. (Mixed waste generated at a facility with a different license number and shipped to a facility for storage or treatment requires a permit and is ineligible for this exemption. In addition, NARM waste is ineligible for this exemption.)

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-857. Conditions to qualify for and maintain a storage and treatment exemption.

1. For a generator's, treater's, or other handler's low-level mixed waste to qualify for the exemption, the generator, treater, or other handler must notify the department in writing by certified delivery that the generator, treater, or other handler is claiming a conditional exemption for the low-level mixed waste stored at the facility. The dated notification must include the generator's, treater's, or other handler's name, address, identification number, nuclear regulatory commission or nuclear regulatory commission agreement state license number, the waste code or codes and storage unit or units for which an exemption is being sought, and a statement that the generator, treater, or other handler meets the conditions of sections 33-24-05-850 through 33-24-05-929. The notification must be signed by an authorized representative who certifies that the information in the notification is true, accurate, and complete. The generator, treater, or other handler must notify the department of the claim either within ninety days of the effective date of this rule, or within ninety days of when a storage unit is first used to store conditionally exempt low-level mixed waste.

2. To qualify for and maintain an exemption for low-level mixed waste, the generator, treater, or other handler must:

   a. Store low-level mixed waste in tanks or containers in compliance with the requirements of the generator's, treater's, or other handler's license that apply to the proper storage of low-level radioactive waste (not including those license requirements that relate solely to recordkeeping);

   b. Store low-level mixed waste in tanks or containers in compliance with chemical compatibility requirements of a tank or container in section 33-24-05-96, or section 33-24-05-112;

   c. Certify that facility personnel who manage stored conditionally exempt low-level mixed waste are trained in a manner that ensures that the conditionally exempt waste is safely managed and includes training in chemical waste management and hazardous materials incidents response that meets the personnel training standards found in subdivision c of subsection 1 of section 33-24-05-07;

   d. Conduct an inventory of the generator's, treater's, or other handler's stored conditionally exempt low-level mixed waste at least annually and inspect it at least quarterly for compliance with sections 33-24-05-850 through 33-24-05-929; and

   e. Maintain an accurate emergency plan and provide copies of the plan to all local authorities who may have to respond to a fire, explosion, or release of hazardous waste or hazardous constituents. The plan must describe emergency response arrangements

with local authorities; describe evacuation plans; list the names, addresses, and telephone numbers of all facility personnel qualified to work with local authorities as emergency coordinators; and list emergency equipment.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-858. [Reserved]

33-24-05-859. [Reserved]

33-24-05-860. Treatment allowed under storage and treatment conditional exemption.

A generator, treater, or other handler may treat low-level mixed waste at the facility within a tank or container in accordance with the terms of the generator's, treater's, or other handler's nuclear regulatory commission or nuclear regulatory commission agreement state license. Treatment that cannot be done in a tank or container without a hazardous waste permit (such as incineration) is not allowed under this exemption.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-861. [Reserved]

33-24-05-862. [Reserved]

33-24-05-863. [Reserved]

33-24-05-864. [Reserved]

33-24-05-865. Loss of conditional exemption.

1. A generator's, treater's, or other handler's low-level mixed waste will automatically lose the storage and treatment conditional exemption if the generator, treater, or other handler fails to meet any of the conditions specified in section 33-24-05-857. When low-level mixed waste loses the exemption, the generator, treater, or other handler must immediately manage that waste which failed the condition as hazardous waste, and the storage unit storing the low-level mixed waste immediately becomes subject to hazardous waste container or tank storage requirements, as applicable.

   a. If a generator, treater, or other handler fails to meet any of the conditions specified in section 33-24-05-857 the generator, treater, or other handler must report to the department and the nuclear regulatory commission, or the oversight agency in the nuclear regulatory commission agreement state, in writing by certified delivery within thirty days of learning of the failure. The report must be signed by an authorized representative certifying that the information provided is true, accurate, and complete. This report must include:

      (1) The specific condition or conditions the generator, treater, or other handler failed to meet;

(2) A description of the low-level mixed waste (including the waste name, hazardous waste code or codes and quantity) and storage location at the facility; and

(3) The date or dates on which the generator, treater, or other handler failed to meet the condition or conditions.

b. If the failure to meet any of the conditions may endanger human health or the environment, the generator, treater, or other handler must also immediately notify the department orally within twenty-four hours and follow up with a written notification within five days. Failures that may endanger human health or the environment include discharge of a comprehensive environmental response, compensation and liability act reportable quantity or other leaking or exploding tanks or containers, or detection of radionuclides above background or hazardous constituents in the leachate collection system of a storage area. If the failure may endanger human health or the environment, the generator, treater, or other handler must follow the provisions of the emergency plan.

2. The department may terminate the conditional exemption for the generator's, treater's, or other handler's low-level mixed waste, or require the generator, treater, or other handler to meet additional conditions to claim a conditional exemption, for serious or repeated noncompliance with any requirement or requirements of sections 33-24-05-850 through 33-24-05-929.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-866. Procedures to reclaim a lost storage and treatment conditional exemption for low-level mixed waste.

1. A generator, treater, or other handler may reclaim the storage and treatment exemption for low-level mixed waste if:

a. The generator, treater, or other handler again meets the conditions specified in section 33-24-05-857; and

b. The generator, treater, or other handler sends the department a notice by certified delivery that the generator, treater, or other handler is reclaiming the exemption for low-level mixed waste. The notice must be signed by an authorized representative certifying that the information contained in the notice is true, complete, and accurate. In the notice the generator, treater, or other handler must do the following:

(1) Explain the circumstances of each failure.

(2) Certify that the generator, treater, or other handler has corrected each failure that caused the loss of the exemption for the low-level mixed waste and that the generator, treater, or other handler again meets all the conditions as of the date specified in the notice.

(3) Describe plans that have been implemented, listing specific steps taken to ensure the conditions will be met in the future.

(4) Include any other information the department should consider when reviewing the notice reclaiming the exemption.

2. The department may terminate a reclaimed conditional exemption if the department finds the claim is inappropriate based on factors including the following: failure to correct the problem; unsatisfactory explanation of the circumstances of the failure; or failure to implement a plan

with steps to prevent another failure to meet the conditions of section 33-24-05-857. In reviewing a reclaimed conditional exemption under this section, the department may add conditions to the exemption to ensure that waste management during storage and treatment of the low-level mixed waste will protect human health and the environment.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-867. [Reserved]

33-24-05-868. [Reserved]

33-24-05-869. [Reserved].

33-24-05-870. Recordkeeping for the storage and treatment conditional exemption.

1. In addition to those records required by the generator's, treater's, or other handler's nuclear regulatory commission or nuclear regulatory commission agreement state license, the generator, treater, or other handler must keep records as follows:

   a. The generator's, treater's, or other handler's initial notification records, return receipts, reports to the department of failure or failures to meet the exemption conditions, and all records supporting any reclaim of an exemption;

   b. Records of low-level mixed waste annual inventories, and quarterly inspections;

   c. Certification that facility personnel who manage stored mixed waste are trained in safe management of low-level mixed waste, including training in chemical waste management and hazardous materials incidents response; and

   d. The emergency plan as specified in subsection 2 of section 33-24-05-857.

2. The generator, treater, or other handler must maintain records concerning notification, personnel trained, and emergency plan for as long as the exemption is claimed and for three years thereafter, or in accordance with nuclear regulatory commission regulations under chapter 33-10-04.1 [10 CFR part 20], whichever is longer. The generator, treater, or other handler must maintain records concerning the annual inventory and quarterly inspections for three years after the waste is sent for disposal, or in accordance with nuclear regulatory commission regulations under chapter 33-10-04.1 [10 CFR part 20], whichever is longer.

3. The retention period referred to in this section is extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the department.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-871. [Reserved]

33-24-05-872. [Reserved]

33-24-05-873. [Reserved]

33-24-05-874. [Reserved]

33-24-05-875. Reentry into regulation under the hazardous waste management rules.

Low-level mixed waste is no longer eligible for the storage and treatment conditional exemption:

1. When the low-level mixed waste has met the requirements of the generator's, treater's, or other handler's nuclear regulatory commission or nuclear regulatory commission agreement state license for decay-in-storage and can be disposed of as nonradioactive waste, then the conditional exemption for storage no longer applies. On that date the waste is subject to hazardous waste regulation under the applicable sections of article 33-24, and the time period for accumulation of a hazardous waste as specified in section 33-24-03-12 begins.

2. When a generator's, treater's, or other handler's conditionally exempt low-level mixed waste, which has been generated and stored under a single nuclear regulatory commission or nuclear regulatory commission agreement state license number, is removed from storage, it is no longer eligible for the storage and treatment exemption, however, the waste may be eligible for the transportation and disposal conditional exemption at section 33-24-05-885.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-876. [Reserved]

33-24-05-877. [Reserved]

33-24-05-878. [Reserved]

33-24-05-879. [Reserved]

33-24-05-880. Storage unit closure.

Interim status and permitted storage units that have been used to store only low-level mixed waste prior to the effective date of sections 33-24-05-850 through 33-24-05-929 and, after that date, store only low-level mixed waste which becomes exempt under sections 33-24-05-850 through 33-24-05-929, are not subject to the closure requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819 or applicable requirements of subsection 5 of section 33-24-06-16. Storage units (or portions of units) that have been used to store both low-level mixed waste and nonmixed hazardous waste prior to the effective date of sections 33-24-05-850 through 33-24-05-929 or are used to store both after that date remain subject to closure requirements of sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, 33-24-05-800 through 33-24-05-819, or applicable requirements of subsection 5 of section 33-24-06-16 with respect to the nonmixed hazardous waste.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-881. [Reserved]

33-24-05-882. [Reserved]

33-24-05-883. [Reserved]

33-24-05-884. [Reserved]

33-24-05-885. Transportation and disposal conditional exemption.

This conditional exemption exempts a generator's, treater's, or other handler's waste from the regulatory definition of hazardous waste in section 33-24-02-03 if the waste meets the eligibility criteria under section 33-24-05-890, and the generator, treater, or other handler meets the conditions in section 33-24-05-895.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-886. [Reserved]

33-24-05-887. [Reserved]

33-24-05-888. [Reserved]

33-24-05-889. [Reserved]

33-24-05-890. Eligibility for the transportation and disposal conditional exemption.

Eligible waste must be:

1. A low-level mixed waste, as defined in section 33-24-05-850, that meets the waste acceptance criteria of a low-level radioactive waste disposal facility;
2. An eligible NARM waste, defined in section 33-24-05-850; or
3. Both a low-level mixed waste and an eligible NARM waste.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-891. [Reserved]

33-24-05-892. [Reserved]

33-24-05-893. [Reserved]

33-24-05-894. [Reserved]

33-24-05-895. Conditions to qualify for and maintain the transportation and disposal conditional exemption.

A generator, treater, or other handler must meet the following conditions for the generator's, treater's, or other handler's eligible waste to qualify for and maintain the exemption:

1. The eligible waste must meet or be treated to meet land disposal restriction treatment standards as described in section 33-24-05-896.

2. If the generator, treater, or other handler is not already subject to nuclear regulatory commission or nuclear regulatory commission agreement state equivalent manifest and transportation regulations for the shipment of the waste, the generator, treater, or other handler must manifest and transport the waste according to nuclear regulatory commission regulations as described in section 33-24-05-897.

3. The exempted waste must be in containers when it is disposed of in the low-level radioactive waste disposal facility as described in section 33-24-05-900.

4. The exempted waste must be disposed of at a designated low-level radioactive waste disposal facility as described in section 33-24-05-899.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-896. Treatment standards for eligible waste.

A generator's, treater's, or other handler's low-level mixed waste or eligible NARM waste must meet land disposal restriction treatment standards specified in sections 33-24-05-280 through 33-24-05-289.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-897. Manifest and transportation of eligible wastes not already subject to nuclear regulatory commission or nuclear regulatory commission agreement state equivalent manifest and transportation regulations.

If the generator, treater, or other handler is not already subject to nuclear regulatory commission or nuclear regulatory commission agreement state equivalent manifest and transportation regulations for the shipment of the generator's, treater's, or other handler's waste, then the generator, treater, or other handler must meet the manifest requirements under chapter 33-10-04.1 [10 CFR 20.2006], and the transportation requirements under chapter 33-10-13 [10 CFR 1.5] to ship the exempted waste.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-898. Transportation and disposal exemption.

The exemption becomes effective once all the following have occurred:

1. The generator's, treater's, or other handler's eligible waste meets the applicable land disposal restriction treatment standards.

2. The generator, treater, or other handler has received return receipts that the department and the low-level radioactive waste disposal facility have received notification as described in section 33-24-05-905.

3. The generator, treater, or other handler has completed the packaging and preparation for shipment requirements for the generator's, treater's, or other handler's waste according to nuclear regulatory commission packaging and transportation regulations found under chapter 33-10-13 [10 CFR part 71]; and the generator, treater, or other handler has prepared a

manifest for the waste according to nuclear regulatory commission manifest regulations found under chapter 33-10-04.1 [10 CFR part 20].

4. The generator, treater, or other handler has placed the waste on a transportation vehicle destined for a low-level radioactive waste disposal facility licensed by the nuclear regulatory commission or a nuclear regulatory commission agreement state.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-899. Disposal facilities for exempted wastes.

The generator's, treater's, or other handler's exempted waste must be disposed of in a low-level radioactive waste disposal facility that is regulated and licensed by the nuclear regulatory commission under 10 CFR part 61 or by a nuclear regulatory commission agreement state under equivalent state regulations where the low-level radioactive waste disposal facility is located, including state NARM licensing regulations for eligible NARM.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-900. Disposal containers for exempted waste.

The generator's, treater's, or other handler's exempted waste must be placed in containers before it is disposed. The container must be:

1. A carbon steel drum;

2. An alternative container with equivalent containment performance in the disposal environment as a carbon steel drum; or

3. A high integrity container as defined by the nuclear regulatory commission.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-901. [Reserved]

33-24-05-902. [Reserved]

33-24-05-903. [Reserved]

33-24-05-904. [Reserved]

33-24-05-905. Notification.

1. The generator, treater, or other handler must provide a one-time notice to the department stating that the generator, treater, or other handler is claiming the transportation and disposal conditional exemption prior to the initial shipment of an exempted waste from the generator's, treater's, or other handler's facility to a low-level radioactive waste disposal facility. The dated written notice must include the generator, treater, or other handler facility name, address, telephone number, and identification number, and be sent by certified delivery.

2. The generator, treater, or other handler must notify the low-level radioactive waste disposal facility receiving the exempted waste by certified delivery before shipment of each exempted waste. The generator, treater, or other handler can only ship the exempted waste after receipt of the return receipt of the notice to the low-level radioactive waste disposal facility. This notification must include the following:

   a. A statement that the generator, treater, or other handler has claimed the exemption for the waste.

   b. A statement that the eligible waste meets applicable land disposal restriction treatment standards.

   c. The generator, treater, or other handler facility's name, address, and identification number.

   d. The hazardous waste code or codes prior to the exemption of the waste streams.

   e. A statement that the exempted waste must be placed in a container according to section 33-24-05-900 prior to disposal in order for the waste to remain exempt under the transportation and disposal conditional exemption of sections 33-24-05-850 through 33-24-05-929.

   f. The manifest number of the shipment that will contain the exempted waste.

   g. A certification that all the information provided is true, complete, and accurate. The statement must be signed by an authorized representative.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-906. [Reserved]

33-24-05-907. [Reserved]

33-24-05-908. [Reserved]

33-24-05-909. [Reserved]

33-24-05-910. Recordkeeping for the transportation and disposal conditional exemption.

In addition to those records required by the generator's, treater's, or other handler's nuclear regulatory commission or nuclear regulatory commission agreement state license, the generator, treater, or other handler must keep records as follows:

1. The generator, treater, or other handler must follow the applicable existing recordkeeping requirements under sections 33-24-05-40 and 33-24-05-256 to demonstrate that the waste has met land disposal restriction treatment standards prior to claiming the exemption.

2. The generator, treater, or other handler must keep a copy of all notifications and return receipts required under sections 33-24-05-915 and 33-24-05-916 for three years after the exempted waste is sent for disposal.

3. The generator, treater, or other handler must keep a copy of all notifications and return receipts required under subsection 1 of section 33-24-05-905 for three years after the last exempted waste is sent for disposal.

4. The generator, treater, or other handler must keep a copy of the notification and return receipt required under subsection 2 of section 33-24-05-905 for three years after the exempted waste is sent for disposal.

5. If the generator, treater, or other handler is not already subject to nuclear regulatory commission or nuclear regulatory commission agreement state equivalent manifest and transportation regulations for the shipment of the waste, the generator, treater, or other handler must also keep all other documents related to tracking the exempted waste as required under chapter 33-10-04.1 (10 CFR 20.2006), including applicable NARM requirements, in addition to the records specified in subsections 1 through 4.

6. The retention period referred to in this section is extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the department.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-911. [Reserved]

33-24-05-912. [Reserved]

33-24-05-913. [Reserved]

33-24-05-914. [Reserved]

33-24-05-915. Loss of transportation and disposal conditional exemption.

1. Any waste will automatically lose the transportation and disposal exemption if the generator, treater, or other handler fails to manage it in accordance with all of the conditions specified in section 33-24-05-895.

   a. When the generator, treater, or other handler fails to meet any of the conditions specified in section 33-24-05-895 for any wastes, the generator, treater, or other handler must report to the department, in writing by certified delivery, within thirty days of learning of the failure. The report must be signed by an authorized representative certifying that the information provided is true, accurate, and complete. This report must include:

      (1) The specific condition or conditions that the generator, treater, or other handler failed to meet for the waste;

      (2) A description of the waste (including the waste name, hazardous waste code or codes and quantity) that lost the exemption; and

      (3) The date or dates on which the generator, treater, or other handler failed to meet the condition or conditions for the waste.

   b. If the failure to meet any of the conditions may endanger human health or the environment, the generator, treater, or other handler must also immediately notify the

department orally within twenty-four hours and follow up with a written notification within five days.

2. The department may terminate the generator's, treater's, or other handler's ability to claim a conditional exemption for the waste, or require the generator, treater, or other handler to meet additional conditions to claim a conditional exemption, for serious or repeated noncompliance with any requirement or requirements of sections 33-24-05-850 through 33-24-05-929.

History: Effective December 1, 2003; amended effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-916. Procedures to reclaim a lost transportation and disposal conditional exemption for low-level mixed waste.

1. The generator, treater, or other handler may reclaim the transportation and disposal exemption for a waste after the generator, treater, or other handler has received a return receipt confirming that the department has received notification of the loss of the exemption specified in subsection 1 of section 33-24-05-915 and if:

   a. The generator, treater, or other handler again meets the conditions specified in section 33-24-05-895 for the waste; and

   b. The generator, treater, or other handler sends a notice, by certified delivery, to the department that the generator, treater, or other handler is reclaiming the exemption for the waste. The notice must be signed by an authorized representative certifying that the information provided is true, accurate, and complete. The notice must:

      (1) Explain the circumstances of each failure.

      (2) Certify that each failure that caused the generator, treater, or other handler to lose the exemption for the waste has been corrected and that the generator, treater, or other handler again meets all conditions for the waste as of the date specified in the notice.

      (3) Describe plans the generator, treater, or other handler has implemented, listing the specific steps taken, to ensure that conditions will be met in the future.

      (4) Include any other information the department should consider when reviewing the notice reclaiming the exemption.

2. The department may terminate a reclaimed conditional exemption if the department finds that the generator's, treater's, or other handler's claim is inappropriate based on factors including failure to correct the problem; unsatisfactory explanation of the circumstances of the failure; or failure to implement a plan with steps to prevent another failure to meet the conditions of section 33-24-05-895. In reviewing a reclaimed conditional exemption under this section, the department may add conditions to the exemption to ensure that transportation and disposal activities will protect human health and the environment.

History: Effective December 1, 2003.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-917. [Reserved]

33-24-05-918. [Reserved]

33-24-05-919. [Reserved]

33-24-05-920. [Reserved]

33-24-05-921. [Reserved]

33-24-05-922. [Reserved]

33-24-05-923. [Reserved]

33-24-05-924. [Reserved]

33-24-05-925. [Reserved]

33-24-05-926. [Reserved]

33-24-05-927. [Reserved]

33-24-05-928. [Reserved]

33-24-05-929. [Reserved]

33-24-05-930. [Reserved]

33-24-05-931. [Reserved]

33-24-05-932. [Reserved]

33-24-05-933. [Reserved]

33-24-05-934. [Reserved]

33-24-05-935. [Reserved]

33-24-05-936. [Reserved]

33-24-05-937. [Reserved]

33-24-05-938. [Reserved]

33-24-05-939. [Reserved]

33-24-05-940. [Reserved]

33-24-05-941. [Reserved]

33-24-05-942. [Reserved]

33-24-05-943. [Reserved]

33-24-05-944. [Reserved]

33-24-05-945. [Reserved]

33-24-05-946. [Reserved]

33-24-05-947. [Reserved]

33-24-05-948. [Reserved]

33-24-05-949. [Reserved]

33-24-05-950. Purpose, scope, and applicability of standardized permits.

1. The purpose of sections 33-24-05-950 through 33-24-05-1149 is to establish minimum standards which define the acceptable management of hazardous waste under sections 33-24-06-45 through 33-24-06-85.

2. Sections 33-24-05-950 through 33-24-05-1149 applies to owners and operators of facilities who treat or store hazardous waste under sections 33-24-06-45 through 33-24-06-85, except as provided otherwise in sections 33-24-02-01 through 33-24-02-07 or subsection 6 of section 33-24-05-01.

3. Notwithstanding any other provisions of this part, enforcement actions may be brought pursuant to section 23-20.3-08 of the North Dakota Century Code.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05, 23-20.3-08, 23-20.3-09

33-24-05-951. Operating status prior to final administrative disposition of the permit application.

If a facility owner or operator has fully complied with the requirements for interim status, as defined in subsection 2 of section 23-20.3-05 of the North Dakota Century Code and regulations under 40 CFR 270.70 as incorporated by reference at subsection 5 of section 33-24-06-16, the owner or operator must comply with the applicable provisions of 40 CFR part 265 as incorporated by reference in subsection 5 of section 33-24-06-16 instead of the rules in sections 33-24-05-950 through 33-24-05-1149, until final administrative disposition of the standardized permit application is made, except as provided under sections 33-24-05-550 through 33-24-05-559.

History: Effective January 1, 2016.

General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-952. [Reserved].

33-24-05-953. [Reserved].

33-24-05-954. [Reserved].

33-24-05-955. [Reserved].

33-24-05-956. [Reserved].

33-24-05-957. [Reserved].

33-24-05-958. [Reserved].

33-24-05-959. [Reserved].

33-24-05-960. General facility standards.

1. Sections 33-24-05-960 through 33-24-05-979 applies to owners or operators of facilities that treat or store hazardous waste under sections 33-24-06-45 through 33-24-06-85, except as provided in subsection 2 of section 33-24-05-950.

2. To comply with sections 33-24-05-960 through 33-24-05-979, the owner or operator must obtain an identification number, and follow the requirements for waste analysis (section 33-24-05-963), security (section 33-24-05-964), inspections (section 33-24-05-965), training (section 33-24-05-966), special waste handling (section 33-24-05-067), and location standards (section 33-24-05-968).

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-961. Identification number.

To comply with sections 33-24-05-950 through 33-24-05-1149, the facility owner or operator must apply to the department for an identification number.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04

33-24-05-962. [Reserved].

33-24-05-963. General waste analysis.

1. Before an owner or operator treats or stores any hazardous wastes, the owner or operator must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all the information needed to treat or store

the waste to comply with sections 33-24-05-950 through 33-24-05-1149 and sections 33-24-05-250 through 33-24-05-299.

a. The analysis may include data that was developed under chapter 33-24-02, and published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

b. The analysis must be repeated as necessary to ensure that it is accurate and up-to-date. At a minimum, the analysis must be repeated if the process or operation generating the hazardous wastes has changed.

2. The owner or operator must develop and follow a written waste analysis plan that describes the procedures which the owner or operator will follow to comply with subsection 1. The owner or operator must keep this plan at the facility. If the facility receives wastes generated from offsite, and is eligible for a standardized permit, the owner or operator also must have submitted the waste analysis plan with the notice of intent. At a minimum, the plan must specify all of the following:

a. The hazardous waste parameters that will be analyzed and the rationale for selecting these parameters, for example, how analysis for these parameters will provide sufficient information on the waste's properties to comply with subsection 1;

b. The test methods which will be used to test for these parameters;

c. The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(1) One of the sampling methods described in appendix I of chapter 33-24-02; or

(2) An equivalent sampling method.

d. The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date; and

e. Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in section 33-24-05-08, subsection 4 of section 33-24-05-404, subsection 4 of section 33-24-05-433, and section 33-24-05-453.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-964. Security.

1. The owner or operator must prevent, and minimize the possibility for, livestock and unauthorized people from entering the active portion of the facility.

2. The facility must have:

a. A twenty-four hour surveillance system, for example, television monitoring or surveillance by guards or facility personnel, that continuously monitors and controls entry onto the active portion of the facility; or

b. An artificial or natural barrier, for example, a fence in good repair or a fence combined with a cliff, that completely surrounds the active portion of the facility; and

c. A means to control entry, at all times, through the gates or other entrances to the active portion of the facility, for example, an attendant, television monitors, locked entrance, or controlled roadway access to the facility.

3. The owner or operator must post a sign at each entrance to the active portion of a facility, and at other prominent locations, in sufficient numbers to be seen from any approach to this active portion. The sign must bear the legend "Danger - Unauthorized Personnel Keep Out". The legend must be in English and in any other language predominant in the area surrounding the facility and must be legible from a distance of at least twenty-five feet. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-965. General inspection requirements.

1. The owner or operator must inspect the facility for malfunctions and deterioration, operator errors, and discharges that may be causing, or may lead to:

   a. Release of hazardous waste constituents to the environment; or

   b. A threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they result in harm to human health or the environment.

2. The owner or operator must develop and follow a written schedule for inspecting, monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

   a. The owner or operator must keep this schedule at the facility.

   b. The schedule must identify the equipment and devices that will be inspected and what problems will be looked for, such as malfunctions or deterioration of equipment, for example, inoperative sump pump or leaking fitting.

   c. The frequency of inspections may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies required in sections 33-24-05-1084, 33-24-05-1103, 33-24-05-1105, 33-24-05-1133, 33-24-05-403, 33-24-05-422, 33-24-05-423, 33-24-05-428, and 33-24-05-453 through 33-24-05-459, where applicable.

3. The owner or operator must remedy any deterioration or malfunction of equipment or structures that the inspection reveals in time to prevent any environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

4. The owner or operator must record all inspections in an inspection log or summary. The owner or operator must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the

inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-966. Personnel training.

1. Facility personnel must successfully complete a program of classroom instruction or on the job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of sections 33-24-05-950 through 33-24-05-1149. The owner or operator shall ensure that this program includes all the elements described in the documents that are required under subdivision c of subsection 4.

   a. This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures, including contingency plan implementation, relevant to their employment positions.

   b. At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by including instruction on emergency procedures, emergency equipment, and emergency systems, including all of the following, where applicable:

      (1) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

      (2) Key parameters for automatic waste feed cut-off systems;

      (3) Communications or alarm systems;

      (4) Response to fires or explosions;

      (5) Response to ground water contamination incidents; and

      (6) Shutdown of operations.

2. Facility personnel must successfully complete the program required in subsection 1 within six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of the facility's standardized permit must not work in unsupervised positions until they have completed the training requirements of subsection 1.

3. Facility personnel must take part in an annual review of the initial training required in subsection 1.

4. The owner or operator must maintain the following documents and records at the facility:

   a. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job.

   b. A written job description for each position listed under subdivision a. This description must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position.

   c. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under subdivision a.

d. Records that document that facility personnel have received and completed the training or job experience required under subsections 1, 2, and 3.

5. Training records on current personnel must be kept until the facility closes. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-967. General requirements for ignitable, reactive, or incompatible wastes.

1. The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste by following these requirements:

   a. These wastes must be separated and protected from sources of ignition or reaction such as: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (for example, from heat producing chemical reactions), and radiant heat;

   b. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flames to specially designated locations; and

   c. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

2. If the owner or operator treats or stores ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, the owner or operator must take precautions to prevent reactions that:

   a. Generate extreme heat or pressure, fire or explosions, or violent reactions;

   b. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

   c. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

   d. Damage the structural integrity of the device or facility; and

   e. Threaten human health or the environment in any similar way.

3. The owner or operator must document compliance with subsection 1 or 2. This documentation may be based on references to published scientific or engineering literature, data from trial tests (for example, bench scale or pilot scale tests), waste analyses (as specified in section 33-24-05-963), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-968. Location standards.

The department will not issue or approve a permit to any facility or portion of a facility which is or will be constructed in a location with a geology, hydrogeology, hydrology, or topography which the

department reasonably believes is incompatible with the type of hazardous waste management activity occurring or proposed to occur. Locations which are specifically within the meaning of this section include but are not limited to floodplains, ground water recharge areas, highly permeable soils, high ground water tables, and areas of high topographic relief.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-969. [Reserved].

33-24-05-970. [Reserved].

33-24-05-971. [Reserved].

33-24-05-972. [Reserved].

33-24-05-973. [Reserved].

33-24-05-974. [Reserved].

33-24-05-975. [Reserved].

33-24-05-976. [Reserved].

33-24-05-977. [Reserved].

33-24-05-978. [Reserved].

33-24-05-979. [Reserved].

33-24-05-980. Preparedness and prevention.

Sections 33-24-05-980 through 33-24-05-989 applies to owners or operators of facilities that treat or store hazardous waste under sections 33-24-06-45 through 33-24-06-85, except as provided in subsection 2 of section 33-24-05-950.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-981. General design and operation standards.

The owner or operator must design, construct, maintain, and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment.

History: Effective January 1, 2016.

General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-982. Required equipment.

The facility must be equipped with all of the following, unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

1. An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

2. A device, such as a telephone (immediately available at the scene of operations), or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;

3. Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

4. Water at adequate volume and pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-983. Testing and maintenance of equipment.

The owner or operator must test and maintain all required facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, as necessary, to assure its proper operation in time of emergency.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-984. Access to communication equipment or alarm system.

1. Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless the device is not required under section 33-24-05-982.

2. If just one employee is on the premises while the facility is operating, that person must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless not required under section 33-24-05-982.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-985. Required aisle space.

The owner or operator must maintain enough aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, as appropriate, considering the type of waste being stored or treated.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-986. Arrangements with local authorities.

1. The owner or operator must attempt to make the following arrangements, as appropriate, for the type of waste handled at the facility and the potential need for the services of these organizations:

   a. Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes;

   b. Agreements designating primary emergency authority to a specific police and a specific fire department where more than one police and fire department might respond to an emergency, and agreements with any others to provide support to the primary emergency authority;

   c. Agreements with state emergency response teams, emergency response contractors, and equipment suppliers; and

   d. Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses that could result from fires, explosions, or releases at the facility.

2. Where state or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-987. [Reserved].

33-24-05-988. [Reserved].

33-24-05-989. [Reserved].

33-24-05-990. Contingency plan and emergency procedures.

Sections 33-24-05-990 through 33-24-05-1009 applies to owners or operators of facilities that treat or store hazardous waste under sections 33-24-06-45 through 33-24-06-85, except as provided in subsection 2 of section 33-24-05-950.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-991. Purpose and implementation of contingency plan.

1. The owner or operator must have a contingency plan for the facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires,

explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

2. The owner or operator must implement the provisions of the plan immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-992. Content of contingency plan.

1. The contingency plan must:

   a. Describe the actions facility personnel will take to comply with sections 33-24-05-991 and 33-24-05-996 in response to fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

   b. Describe all arrangements agreed upon under section 33-24-05-986 by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services.

   c. List names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see section 33-24-05-995), and the owner or operator must keep the list up-to-date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

   d. Include a current list of all emergency equipment at the facility such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment, where this equipment is required. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

   e. Include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signals to be used to begin evacuation, evacuation routes, and alternate evacuation routes, in cases where the primary routes could be blocked by releases of hazardous waste or fires.

2. If the owner or operator has already prepared a spill prevention, control, and countermeasures (SPCC) plan under 40 CFR part 112, or some other emergency or contingency plan, the owner or operator need only amend that plan to incorporate hazardous waste management provisions that will comply with these requirements.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-993. Copies of contingency plan.

1. The owner or operator must maintain a copy of the plan with all revisions at the facility; and

2. A copy must be submitted, with all revisions, to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-994. Amendment of contingency plan.

The owner or operator must review, and immediately amend the contingency plan, if necessary, whenever:

1. The facility permit is revised;

2. The plan fails in an emergency;

3. The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

4. The list of emergency coordinators changes; or

5. The list of emergency equipment changes.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-995. Emergency coordinator.

At least one employee must be either on the facility premises or on call at all times, for example, available to respond to an emergency by reaching the facility within a short period of time, who has the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-996. Emergency procedures.

1. Whenever there is an imminent or actual emergency situation, the emergency coordinator, or the coordinator's designee when the emergency coordinator is on call, must immediately:

    a. Activate internal facility alarm or communication systems, where applicable, to notify all facility personnel; and

    b. Notify appropriate state or local agencies with designated response roles if their help is needed.

2. Whenever there is a release, fire, or explosion, the emergency coordinator must:

    a. Immediately identify the character, exact source, amount, and areal extent of any released materials. The emergency coordinator may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

b. Assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion. For example, the assessment would consider the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water runoff from water or chemical agents used to control fire and heat induced explosions.

3. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, the emergency coordinator must report the coordinator's findings as follows:

   a. If the coordinator's assessment indicates that evacuation of local areas may be advisable, the coordinator must immediately notify appropriate local authorities. The coordinator must be available to help appropriate officials decide whether local areas should be evacuated.

   b. The coordinator must immediately notify either the government official designated as the on-scene coordinator for that geographical area or the national response center, using their twenty-four hour toll-free number 800-424-8802. The report must include:

      (1) Name and telephone number of the reporter;

      (2) Name and address of facility;

      (3) Time and type of incident, for example, a release or a fire;

      (4) Name and quantity of materials involved, to the extent known;

      (5) The extent of injuries, if any; and

      (6) The possible hazards to human health or the environment outside the facility.

4. During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

5. If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, when appropriate.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-997. Procedures after an emergency.

1. Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

2. The emergency coordinator must ensure that, in the affected areas of the facility:

   a. No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.

b. All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-998. Notification and recordkeeping after an emergency.

1. The owner or operator must notify the department and other appropriate state and local authorities, that the facility is in compliance with subsection 2 of section 33-24-05-997 before operations are resumed in the affected areas of the facility.

2. The owner or operator must note the time, date, and details of any incident that requires implementing the contingency plan in the operating record. Within fifteen days after the incident, the owner or operator must submit a written report on the incident to the department. The report must include the following:

   a. The name, address, and telephone number of the owner or operator;

   b. The name, address, and telephone number of the facility;

   c. The date, time, and type of incident (for example, fire, explosion);

   d. The name and quantity of materials involved;

   e. The extent of injuries, if any;

   f. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

   g. The estimated quantity and disposition of recovered material that resulted from the incident.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-999. [Reserved].

33-24-05-1000. [Reserved].

33-24-05-1001. [Reserved].

33-24-05-1002. [Reserved].

33-24-05-1003. [Reserved].

33-24-05-1004. [Reserved].

33-24-05-1005. [Reserved].

33-24-05-1006. [Reserved].

33-24-05-1007. [Reserved].

33-24-05-1008. [Reserved].

33-24-05-1009. [Reserved].

33-24-05-1010. Recordkeeping, reporting, and notifying.

Sections 33-24-05-1010 through 33-24-05-1019 applies to owners or operators of facilities that store or nonthermally treat hazardous waste under sections 33-24-06-45 through 33-24-06-85, except as provided in subsection 2 of section 33-24-05-950. In addition, the owner or operator must comply with the manifest requirements of chapter 33-24-03 whenever a shipment of hazardous waste is initiated from the facility.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1011. Use of manifest system.

1. If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or the owner's or operator's agent, must:

    a. Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

    b. Note any significant discrepancies in the manifest, as defined in subsection 1 of section 33-24-05-1012, on each copy of the manifest;

    c. Immediately give the transporter at least one copy of the signed manifest;

    d. Within thirty days after the delivery, send a copy of the manifest to the generator; and

    e. Retain at the facility a copy of each manifest for at least three years from the date of delivery.

2. If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the identification numbers, generator's certification, and signatures), the owner or operator, or the owner's or operator's agent, must:

    a. Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received.

    b. Note any significant discrepancies, as defined in subsection 1 of section 33-24-05-1012, in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper. Note that the department does not intend that the owner or operator of a facility whose procedures under subsection 2 of section 33-24-05-963 include waste analysis must perform that analysis before signing the shipping paper and giving it to the transporter. Subsection 2 of section 33-24-05-1012, however, requires reporting an unreconciled discrepancy discovered during later analysis.

    c. Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received).

d. Within thirty days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within thirty days after delivery, the owner or operator, or the owner's or operator's agent, must send a copy of the shipping paper signed and dated to the generator. Note that subsection 3 of section 33-24-03-07 requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).

e. Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least three years from the date of delivery.

3. Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of chapter 33-24-03. The department notes that the provisions of section 33-24-03-12 are applicable to the onsite accumulation of hazardous wastes by generators. Therefore, the provisions of section 33-24-03-12 only apply to owners or operators who are shipping hazardous waste which they generated at that facility.

4. Within three working days of the receipt of a shipment subject to sections 33-24-03-50 through 33-24-03-59, the owner or operator of the facility must provide a copy of the tracking document bearing all required signatures to the notifier, to the department, to the Office of Enforcement and Compliance Assurance, Office of Compliance, Enforcement Planning, Targeting and Data Division (2222A), Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, D.C. 20460, and to competent authorities of all other concerned countries. The original copy of the tracking document must be maintained at the facility for at least three years from the date of signature.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1012. Manifest discrepancies.

1. Manifest discrepancies are differences between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a facility actually receives. Significant discrepancies in quantity are:

   a. For bulk waste, variations greater than ten percent in weight; and

   b. For batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

2. Upon discovering a significant discrepancy, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (for example, with telephone conversations). If the discrepancy is not resolved within fifteen days after receiving the waste, the owner or operator must immediately submit to the department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1013. Operating record.

1. The owner or operator must keep a written operating record at the facility.

2. The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

   a. A description and the quantity of each type of hazardous waste generated, and the methods and dates of its storage or treatment or both at the facility as required by appendix I of chapter 33-24-05;

   b. The location of each hazardous waste within the facility and the quantity at each location;

   c. Records and results of waste analyses and waste determinations performed as specified in sections 33-24-05-963, 33-24-05-967, 33-24-05-404, 33-24-05-433, 33-24-05-453, and 33-24-05-256;

   d. Summary reports and details of all incidents that require the owner or operator to implement the contingency plan as specified in subsection 2 of section 33-24-05-998;

   e. Records and results of inspections as required by subsection 4 of section 33-24-05-965 (except the owner or operator needs to keep this data for only three years);

   f. Monitoring, testing or analytical data, and corrective action when required by sections 33-24-05-1020 through 33-24-05-1039 and sections 33-24-05-1101, 33-24-05-1103, 33-24-05-1105, and subsections 3 through 6 of section 33-24-05-404, 33-24-05-405, subsections 4 through 9 of section 33-24-05-433, 33-24-05-434, 33-24-05-458, 33-24-05-459, and 33-24-05-460;

   g. All closure cost estimates under section 33-24-05-1062;

   h. A certification, at least annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that is generated to the degree determined to be economically practicable; and that the proposed method of treatment or storage is that practicable method currently available to the permittee that minimizes the present and future threat to human health and the environment;

   i. For an onsite treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration, if applicable, required by the permittee under section 33-24-05-256;

   j. For an onsite storage facility, the information in the notice (except the manifest number), and the certification and demonstration, if applicable, required by the permittee under section 33-24-05-256;

   k. For an offsite treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under section 33-24-05-256; and

   l. For an offsite storage facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under section 33-24-05-256.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1014. Availability, retention, and disposition of records.

1. All records, including plans, required under sections 33-24-05-950 through 33-24-05-1149 must be furnished upon request, and made available at all reasonable times for inspection, by a duly designated officer, employee, or representative of the department.

2. The retention period for all records required under sections 33-24-05-950 through 33-24-05-1149 is extended automatically during the course of any unresolved enforcement action involving the facility or as requested by the department.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-06

33-24-05-1015. Reports.

The owner or operator must prepare and submit a biennial report and other reports listed in subsection 2.

1. Biennial report. The owner or operator must prepare and submit a single copy of a biennial report to the department by March 1 of each even numbered year. The biennial report form and instructions can be obtained from the department's division of waste management. The report must cover facility activities during the previous calendar year and must include:

   a. The identification number, name, and address of the facility;

   b. The calendar year covered by the report;

   c. The method of treatment or storage for each hazardous waste;

   d. The most recent closure cost estimate under section 33-24-05-1062;

   e. A description of the efforts undertaken during the year to reduce the volume and toxicity of generated waste;

   f. A description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984; and

   g. The certification signed by the owner or operator.

2. Additional reports. In addition to submitting the biennial reports, the owner or operator must also report to the department:

   a. Releases, fires, and explosions as specified in subsection 2 of section 33-24-05-998;

   b. Facility closures specified in section 33-24-05-1047; and

   c. As otherwise required by sections 33-24-05-1080 through 33-24-05-1099, 33-24-05-1100 through 33-24-05-1129, 33-24-05-1130 through 33-24-05-1149, and 33-24-05-400 through 33-24-05-474.

3. For offsite facilities, the identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator.

4. A description and the quantity of each hazardous waste the facility received during the year. For offsite facilities, this information must be listed by identification number of each generator.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1016. Transfer of ownership.

Before transferring ownership or operation of a facility during its operating life, the permittee must notify the new owner or operator in writing of the requirements of sections 33-24-05-950 through 33-24-05-1149 and sections 33-24-06-45 through 33-24-06-85.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1017. [Reserved].

33-24-05-1018. [Reserved].

33-24-05-1019. [Reserved].

33-24-05-1020. Releases from solid waste management units.

Sections 33-24-05-1020 through 33-24-05-1039 applies to the owner or operator of a facility that treats or stores hazardous waste and is regulated under sections 33-24-06-45 through 33-24-06-85, except as provided in subsection 2 of section 33-24-05-950, or unless the facility already has a permit that imposes requirements for corrective action under section 33-24-05-58.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1021. [Reserved].

33-24-05-1022. [Reserved].

33-24-05-1023. [Reserved].

33-24-05-1024. [Reserved].

33-24-05-1025. [Reserved].

33-24-05-1026. [Reserved].

33-24-05-1027. [Reserved].

33-24-05-1028. [Reserved].

33-24-05-1029. [Reserved].

33-24-05-1030. [Reserved].

33-24-05-1031. Corrective action for solid waste management units.

1. The owner or operator must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit.

2. The department will specify corrective action in the supplemental portion of the standardized permit in accordance with this section and sections 33-24-05-550 through 33-24-05-559. The department will include in the supplemental portion of the standardized permit schedules of compliance for corrective action (where corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing corrective action.

3. The owner or operator must implement corrective action beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the department that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner or operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied. Onsite measures to address such releases will be determined on a case-by-case basis. The owner or operator must provide assurances of financial responsibility for such corrective action.

4. The owner or operator does not have to comply with this section if the owner or operator are the owner or operator of a remediation waste site unless the owner's or operator's site is part of a facility that is subject to a permit for treating, storing, or disposing of hazardous wastes that are not remediation wastes.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05, 23-20.3-07

33-24-05-1032. [Reserved].

33-24-05-1033. [Reserved].

33-24-05-1034. [Reserved].

33-24-05-1035. [Reserved].

33-24-05-1036. [Reserved].

33-24-05-1037. [Reserved].

33-24-05-1038. [Reserved].

33-24-05-1039. [Reserved].

33-24-05-1040. Applicability of closure requirements.

Sections 33-24-05-1040 through 33-24-05-1059 applies to the owner or operator of a facility that treats or stores hazardous waste and is regulated under sections 33-24-06-45 through 33-24-06-85, except as provided in subsection 2 of section 33-24-05-950.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1041. Closure performance standard.

The owner or operator shall close the storage and treatment units in a manner that:

1. Minimizes the need for further maintenance;

2. Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and

3. Meets the closure requirements of sections 33-24-05-1040 through 33-24-05-1059 and the requirements of sections 33-24-05-1086, 33-24-05-1111, and 33-24-05-1138. If the owner or operator determines that, when applicable, the closure requirements of section 33-24-05-1111 (tanks) or section 33-24-05-1138 (containment buildings) cannot be met, then the owner or operator must close the unit in accordance with the requirements that apply to landfills (section 33-24-05-180). In addition, for the purposes of postclosure and financial responsibility, such a tank system or containment building is then considered to be a landfill, and the owner or operator must apply for a postclosure care permit in accordance with chapter 33-24-06.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1042. Closure plan.

1. To close the facility, the owner or operator must follow an approved closure plan, and follow notification requirements.

   a. The closure plan must be submitted with the notice of intent to operate under a standardized permit. Final issuance of the standardized permit constitutes approval of the closure plan, and the plan becomes a condition of the hazardous waste standardized permit.

   b. The department's approval of the plan must ensure that the approved plan is consistent with sections 33-24-05-1041 through 33-24-05-1045, 33-24-05-1086, 33-24-05-1111, and 33-24-05-1138.

2. Satisfy the requirements for content of a closure plan. The closure plan must identify steps necessary to perform partial or final, or both, closure of the facility. The closure plan must include, at least:

   a. A description of how each hazardous waste management unit at the facility subject to sections 33-24-05-1040 through 33-24-05-1059 will be closed in accordance with section 33-24-05-1041.

b. A description of how final closure of the facility will be conducted in accordance with section 33-24-05-1041. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility.

c. An estimate of the maximum inventory of hazardous wastes ever onsite during the active life of the facility and a detailed description of the methods to be used during partial or final, or both, closure, such as methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the types of offsite hazardous waste management units to be used, if applicable.

d. A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial or final closure. These might include procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard.

e. A detailed description of other activities necessary during the closure period to ensure that partial or final closure satisfies the closure performance standards.

f. A schedule for closure of each hazardous waste management unit, and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities that allow tracking of progress of partial or final closure.

g. For facilities that use trust funds to establish financial assurance under section 33-24-05-1063 and that are expected to close prior to the expiration of the permit, an estimate of the expected year of final closure.

3. The owner or operator may submit a written notification to the department for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility, following the applicable procedures in section 33-24-07-51.

   a. Events leading to a change in the closure plan, and requiring a modification, may include:

      (1) A change in the operating plan or facility design;

      (2) A change in the expected year of closure, if applicable; or

      (3) In conducting partial or final closure activities, an unexpected event requiring a modification of the approved closure plan.

   b. The written notification or request must include a copy of the amended closure plan for review or approval by the department. The department will approve, disapprove, or modify this amended plan in accordance with the procedures in sections 33-24-07-51 and 33-24-06-85.

4. Notification before final closure.

   a. The owner or operator must notify the department in writing at least forty-five days before the date that the owner or operator expects to begin final closure of a treatment or storage tank, container storage area, or containment building.

   b. The date when the owner or operator expects to begin closure must be no later than thirty days after the date that any hazardous waste management unit receives the known final volume of hazardous wastes.

c. If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under North Dakota Century Code section 23-20.3-08, to cease receiving hazardous wastes or to close, then the requirements of this subsection do not apply. However, the owner or operator must close the facility following the deadlines established in section 33-24-05-1045.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1043. Public comment on the closure plan.

1. The department will provide the owner or operator and the public, when the draft standardized permit is public noticed, the opportunity to submit written comments on the plan and to the draft permit as allowed by section 33-24-07-48. The department will also, in response to a request or at the department's own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning the closure plan, and the permit.

2. The department will give public notice of the hearing thirty days before it occurs. Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1044. [Reserved].

33-24-05-1045. Closure - Time allowed for closure.

1. Within ninety days after the final volume of hazardous waste is sent to a unit, the owner or operator must treat or remove from the unit all hazardous wastes following the approved closure plan.

2. The owner or operator must complete final closure activities in accordance with the approved closure plan within one hundred eighty days after the final volume of hazardous wastes is sent to the unit. The department may approve an extension of one hundred eighty days to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:

   a. The final closure activities will take longer than one hundred eighty days to complete due to circumstances beyond the owner's or operator's control, excluding ground water contamination;

   b. The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed, but not operating hazardous waste management unit or facility, including compliance with all applicable permit requirements; and

   c. The demonstration must be made at least thirty days prior to the expiration of the initial one hundred eighty-day period.

3. Nothing in this section precludes the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved final closure plan at any time before or after notification of final closure.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1046. Disposal or decontamination of equipment, structures, and soils.

The owner or operator must properly dispose of or decontaminate all contaminated equipment, structures, and soils during the partial and final closure periods. By removing any hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that waste following all applicable requirements of chapter 33-24-03.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1047. Certification of closure.

Within sixty days of the completion of final closure of each unit under sections 33-24-06-45 through 33-24-06-85, the owner or operator must submit to the department, by registered mail, a certification that each hazardous waste management unit or facility, as applicable, has been closed following the specifications in the closure plan. Both the owner or operator and a qualified professional engineer must sign the certification. Documentation supporting the qualified professional engineer's certification must be furnished to the department upon request until the department releases the owner or operator from the financial assurance requirements for closure under subsection 10 of section 33-24-05-1063.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1048. [Reserved].

33-24-05-1049. [Reserved].

33-24-05-1050. [Reserved].

33-24-05-1051. [Reserved].

33-24-05-1052. [Reserved].

33-24-05-1053. [Reserved].

33-24-05-1054. [Reserved].

33-24-05-1055. [Reserved].

33-24-05-1056. [Reserved].

33-24-05-1057. [Reserved].

33-24-05-1058. [Reserved].

33-24-05-1059. [Reserved].

33-24-05-1060. Applicability of financial requirements.

1. The requirements of sections 33-24-05-1060 through 33-24-05-1079 apply to owners and operators who treat or store hazardous waste under a standardized permit, except as provided in subsection 2 of section 33-24-05-950 or subsection 4.

2. The owner or operator must:

   a. Prepare a closure cost estimate as required in section 33-24-05-1062;

   b. Demonstrate financial assurance for closure as required in section 33-24-05-1063; and

   c. Demonstrate financial assurance for liability as required in section 33-24-05-1067.

3. The owner or operator must notify the department if the owner or operator is named as a debtor in a bankruptcy proceeding under title 11 (bankruptcy), United States Code (see also section 33-24-05-1068).

4. States and the federal government are exempt from the requirements of sections 33-24-05-1060 through 33-24-05-1079.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1061. Definitions of terms.

1. "Closure plan" means the plan for closure prepared in accordance with the requirements of section 33-24-05-1042.

2. "Current closure cost estimate" means the most recent of the estimates prepared in accordance with subsections 1, 2, and 3 of section 33-24-05-1062.

3. [Reserved]

4. "Parent corporation" means a corporation which directly owns at least fifty percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

5. [Reserved]

6. The following terms are used in the specifications for the financial tests for closure and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices:

   a. "Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

   b. "Current plugging and abandonment cost estimate" means the most recent of the estimates prepared in accordance with 40 CFR section 144.62(a), (b), and (c).

c. "Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

d. "Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

e. "Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

7. In the liability insurance requirements, the terms "bodily injury and property damage" shall have the meanings given these terms by applicable North Dakota state law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The department intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

   a. "Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

   b. "Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

   c. "Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

8. "Substantial business relationship" means the extent of a business relationship necessary under applicable North Dakota state law to make a guarantee contract issued incident to that relationship valid and enforceable. A "substantial business relationship" must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the department.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1062. Cost estimates for closure.

1. The owner or operator must have at the facility a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in sections 33-24-05-1041 through 33-24-05-1045 and applicable closure requirements in sections 33-24-05-1086, 33-24-05-1111, and 33-24-05-1138.

   a. The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by the closure plan (see subsection 2 of section 33-24-05-1042).

   b. The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator (see definition of parent corporation in subsection 4 of section 33-24-05-1061). The owner or operator may use costs for onsite disposal if the

owner or operator can demonstrate that onsite disposal capacity will exist at all times over the life of the facility.

c. The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or nonhazardous wastes, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

d. The owner or operator may not incorporate a zero cost for hazardous wastes, or nonhazardous wastes that might have economic value.

2. During the active life of the facility, the owner or operator must adjust the closure cost estimate for inflation within sixty days prior to the anniversary date of the establishment of the financial instruments used to comply with section 33-24-05-1063. For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within thirty days after the close of the firm's fiscal year and before submission of updated information to the department as specified in paragraph 3 of subdivision b of subsection 6 of section 33-24-05-1063. The adjustment may be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent implicit price deflator for gross domestic product published by the United States department of commerce in its survey of current business, as specified in subdivisions a and b. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year.

   a. The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

   b. Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

3. During the active life of the facility, the owner or operator must revise the closure cost estimate no later than thirty days after the department has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in subsection 2.

4. The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with subsections 1 and 3 and, when this estimate has been adjusted in accordance with subsection 2, the latest adjusted closure cost estimate.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1063. Financial assurance for closure.

The owner or operator must establish financial assurance for closure of each storage or treatment unit that the owner or operator owns or operates. In establishing financial assurance for closure, the owner or operator must choose from the financial assurance mechanisms in subsections 1 through 7. The owner or operator can also use a combination of mechanisms for a single facility if the owner or operator meets the requirements in subsection 8, or may use a single mechanism for multiple facilities as in subsection 9. The department will release the owner or operator from the requirements of this section after the owner or operator meets the criteria under subsection 10.

1. Closure Trust Fund. Owners and operators can use the "closure trust fund" that is specified in subdivisions a and b of subsection 1 of section 33-24-05-77, and subdivisions f, g, h, i, k, and l

of subsection 1 of section 33-24-05-77. For purposes of this subsection, the following provisions also apply:

a. Payments into the trust fund for a new facility must be made annually by the owner or operator over the remaining operating life of the facility as estimated in the closure plan, or over three years, whichever period is shorter. This period of time is hereafter referred to as the "pay-in period".

b. For a new facility, the first payment into the closure trust fund must be made before the facility may accept the initial storage. A receipt from the trustee must be submitted by the owner or operator to the department before this initial storage of waste. The first payment must be at least equal to the current closure cost estimate, divided by the number of years in the pay-in period, except as provided in subsection 8 for multiple mechanisms. Subsequent payments must be made no later than thirty days after each anniversary date of the first payment. The owner or operator determines the amount of each subsequent payment by subtracting the current value of the trust fund from the current closure cost estimate, and dividing this difference by the number of years remaining in the pay-in period. Mathematically, the formula is:

   Next payment = (current closure estimate - current value of the trust fund) divided by years remaining in the pay-in period.

c. The owner or operator of a facility existing on the effective date of this subsection can establish a trust fund to meet this subsection's financial assurance requirements. If the value of the trust fund is less than the current closure cost estimate when a final approval of the permit is granted for the facility, the owner or operator must pay the difference into the trust fund within sixty days.

d. The owner or operator may accelerate payments into the trust fund or deposit the full amount of the closure cost estimate when establishing the trust fund. However, the owner or operator must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in subdivision b or c.

e. The owner or operator must submit a trust agreement with the wording specified in subdivision a of subsection 1 of section 33-24-05-81.

2. Surety bond guaranteeing payment into a closure trust fund. Owners and operators can use the "surety bond guaranteeing payment into a closure trust fund", as specified in subsection 2 of section 33-24-05-77, including the use of the surety bond instrument specified at subsection 2 of section 33-24-05-81, and the standby trust specified at subdivision c of subsection 2 of section 33-24-05-77.

3. Surety bond guaranteeing performance of closure. Owners and operators can use the "surety bond guaranteeing performance of closure", as specified in subsection 3 of section 33-24-05-77, the submission and use of the surety bond instrument specified at subsection 3 of section 33-24-05-81, and the standby trust specified at subdivision c of subsection 3 of section 33-24-05-77.

4. Closure letter of credit. Owners and operators can use the "closure letter of credit" specified in subsection 4 of section 33-24-05-77, the submission and use of the irrevocable letter of credit instrument specified in subsection 4 of section 33-24-05-81, and the standby trust specified in subdivision c of subsection 4 of section 33-24-05-77.

5. Closure insurance. Owners and operators can use "closure insurance", as specified in subsection 5 of section 33-24-05-77, utilizing the certificate of insurance for closure specified at subsection 5 of section 33-24-05-81.

6. Corporate financial test. An owner or operator that satisfies the requirements of this subsection may demonstrate financial assurance up to the amount specified in this subsection:

a. Financial component.

(1) The owner or operator must satisfy one of the following three conditions:

(a) A current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

(b) A ratio of less than one and five-tenths comparing total liabilities to net worth; or

(c) A ratio of greater than one-tenth comparing the sum of net income plus depreciation, depletion and amortization, minus ten million dollars, to total liabilities.

(2) The tangible net worth of the owner or operator must be greater than:

(a) The sum of the current environmental obligations (see item 1 of subparagraph a of paragraph 1 of subdivision b), including guarantees, covered by a financial test plus ten million dollars, except as provided in subparagraph b.

(b) Ten million dollars in tangible net worth plus the amount of any guarantees that have not been recognized as liabilities on the financial statements provided all of the environmental obligations (see item 1 of subparagraph a of paragraph 1 of subdivision b) covered by a financial test are recognized as liabilities on the owner's or operator's audited financial statements, and subject to the approval of the department.

(3) The owner or operator must have assets located in the United States amounting to at least the sum of environmental obligations covered by a financial test as described in item 1 of subparagraph a of paragraph 1 of subdivision b.

b. Recordkeeping and reporting requirements.

(1) The owner or operator must submit the following items to the department:

(a) A letter signed by the owner's or operator's chief financial officer that:

[1] Lists all the applicable current types, amounts, and sums of environmental obligations covered by a financial test. These obligations include both obligations in the programs which the environmental protection agency directly operates and obligations where the environmental protection agency has delegated authority to the state or approved the state's program. These obligations include, but are not limited to:

[a] Liability, closure, postclosure and corrective action cost estimates required for hazardous waste treatment, storage, and disposal facilities under sections 33-24-05-58, 33-24-05-76, 33-24-05-79, and subsection 5 of section 33-24-06-16;

[b] Cost estimates required for municipal solid waste management facilities under sections 33-20-14-02, 33-20-14-03, 33-20-14-04, and 33-20-14-05;

[c] Current plugging cost estimates required for underground injection control facilities under subdivision d of subsection 1 of section 33-25-01-06;

[d] Cost estimates required for petroleum underground storage tank facilities under section 33-24-08-83;

[e] Cost estimates required for polychlorinated biphenyl storage facilities under 40 CFR section 761.65;

[f] Any financial assurance required under, or as part of an action undertaken under, the comprehensive environmental response, compensation, and liability act; and

[g] Any other environmental obligations that are assured through a financial test.

[2] Provides evidence demonstrating that the firm meets the conditions of either subparagraph a or b or c of paragraph 1 of subdivision a and paragraphs 2 and 3 of subdivision a.

(b) A copy of the independent certified public accountant's unqualified opinion of the owner's or operator's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion, disclaimer of opinion, or other qualified opinion will be cause for disallowance, with the potential exception for qualified opinions provided in the next sentence. The department may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where the department deems that the matters which form the basis for the qualification are insufficient to warrant disallowance of the test. If the department does not allow use of the test, the owner or operator must provide alternate financial assurance that meets the requirements of this section within thirty days after the notification of disallowance.

(c) If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that the owner or operator satisfies subparagraph b or c of paragraph 1 of subdivision a that are different from data in the audited financial statements referred to in subparagraph b or any other audited financial statement or data filed with the securities and exchange commission, then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

(d) If the chief financial officer's letter provides a demonstration that the firm has assured for environmental obligations as provided in subparagraph b of paragraph 2 of subdivision a, then the letter shall include a report from the

independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements, how these obligations have been measured and reported, and that the tangible net worth of the firm is at least ten million dollars plus the amount of any guarantees provided.

(2) The owner or operator of a new facility must submit the items specified in paragraph 1 to the department at least sixty days before placing waste in the facility.

(3) After the initial submission of items specified in paragraph 1, the owner or operator must send updated information to the department within ninety days following the close of the owner or operator's fiscal year. The department may provide up to an additional forty-five days for an owner or operator who can demonstrate that ninety days is insufficient time to acquire audited financial statements. The updated information must consist of all items specified in paragraph 1.

(4) The owner or operator is no longer required to submit the items specified in this subdivision or comply with the requirements of this subsection when:

(a) The owner or operator substitutes alternate financial assurance as specified in this section that is not subject to these recordkeeping and reporting requirements; or

(b) The department releases the owner or operator from the requirements of this subsection in accordance with subsection 10.

(5) An owner or operator who no longer meets the requirements of subdivision a cannot use the financial test to demonstrate financial assurance. Instead an owner or operator who no longer meets the requirements of subdivision a, must:

(a) Send notice to the department of intent to establish alternate financial assurance as specified in this section. The owner or operator must send this notice by certified mail within ninety days following the close of the owner's or operator's fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements of this subsection.

(b) Provide alternative financial assurance within one hundred twenty days after the end of such fiscal year.

(6) The department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subdivision a, require at any time the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in subdivision b. If the department finds that the owner or operator no longer meets the requirements of subdivision a, the owner or operator must provide alternate financial assurance that meets the requirements of this section.

7. Corporate Guarantee.

a. An owner or operator may meet the requirements of this section by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in subsection 6 and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording in subsection 8 of section 33-24-05-81. The certified copy of the guarantee must accompany the letter from the guarantor's chief

financial officer and accountants' opinions. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter from the guarantor's chief financial officer must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

b. For a new facility, the guarantee must be effective and the guarantor must submit the items in subdivision a and the items specified in paragraph 1 of subdivision b of subsection 6 to the department at least sixty days before the owner or operator places waste in the facility.

c. The terms of the guarantee must provide that:

(1) If the owner or operator fails to perform closure at a facility covered by the guarantee, the guarantor will:

(a) Perform, or pay a third party to perform closure (performance guarantee); or

(b) Establish a fully funded trust fund as specified in subsection 1 in the name of the owner or operator (payment guarantee).

(2) The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of this subpart unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the one hundred twenty days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department as evidenced by the return receipts.

(3) If notice of cancellation is given, the owner or operator must, within ninety days following receipt of the cancellation notice by the owner or operator and the department, obtain alternate financial assurance, and submit documentation for that alternate financial assurance to the department. If the owner or operator fails to provide alternate financial assurance and obtain the written approval of such alternative assurance from the department within the ninety-day period, the guarantor must provide that alternate assurance in the name of the owner or operator and submit the necessary documentation for the alternative assurance to the department within one hundred twenty days of the cancellation notice.

d. If a corporate guarantor no longer meets the requirements of subdivision a of subsection 6, the owner or operator must, within ninety days, obtain alternative assurance, and submit the assurance to the department for approval. If the owner or operator fails to provide alternate financial assurance within the ninety-day period, the guarantor must provide that alternate assurance within the next thirty days, and submit it to the department for approval.

e. The guarantor is no longer required to meet the requirements of this subsection when:

(1) The owner or operator substitutes alternate financial assurance as specified in this section; or

(2) The owner or operator is released from the requirements of this subsection in accordance with subsection 10.

8. Use of Multiple Financial Mechanisms. An owner or operator may use more than one mechanism at a particular facility to satisfy the requirements of this section. The acceptable

mechanisms are trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, insurance, the financial test, and the guarantee, except owners or operators cannot combine the financial test with the guarantee. The mechanisms must be as specified in subsections 1, 2, 4, 5, 6, and 7, respectively, except it is the combination of mechanisms rather than a single mechanism that must provide assurance for an amount at least equal to the cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or letter of credit, the owner or operator may use the trust fund as the standby trust for the other mechanisms. A single trust fund can be established for two or more mechanisms. The department may use any or all of the mechanisms to provide for closure of the facility.

9. Use of a financial mechanism for multiple facilities. An owner or operator may use a financial mechanism for multiple facilities, as specified in subsection 8 of section 33-24-05-77.

10. Release of the owner or operator from the requirements of this section. Within sixty days after receiving certifications from the owner or operator and a qualified professional engineer that final closure has been completed in accordance with the approved closure plan, the department will notify the owner or operator in writing that the owner or operator is no longer required by this section to maintain financial assurance for final closure of the facility, unless the department has reason to believe that final closure has not been completed in accordance with the approved closure plan. The department shall provide the owner or operator with a detailed written statement of any such reasons to believe that closure has not been conducted in accordance with the approved closure plan.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1064. [Reserved].

33-24-05-1065. [Reserved].

33-24-05-1066. [Reserved].

33-24-05-1067. Liability requirements.

1. Coverage for sudden accidental occurrences. An owner or operator of a hazardous waste treatment or storage facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least one million dollars per occurrence with an annual aggregate of at least two million dollars, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in subdivisions a through g:

   a. Trust fund for liability coverage. An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in subsection 10 of section 33-24-05-79.

   b. Surety bond for liability coverage. An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in subsection 9 of section 33-24-05-79.

c. Letter of credit for liability coverage. An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in subsection 8 of section 33-24-05-79.

d. Insurance for liability coverage. An owner or operator may meet the requirements of this section by obtaining liability insurance as specified in subdivision a of subsection 1 of section 33-24-05-79.

e. Financial test for liability coverage. An owner or operator may meet the requirements of this section by passing a financial test as specified in subsection 6.

f. Guarantee for liability coverage. An owner or operator may meet the requirements of this section by obtaining a guarantee as specified in subsection 7.

g. Combination of mechanisms. An owner or operator may demonstrate the required liability coverage through the use of combinations of mechanisms as allowed by subdivision f of subsection 1 of section 33-24-05-79.

h. An owner or operator shall notify the department in writing within thirty days whenever:

(1) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subdivisions a through g;

(2) A certification of valid claim for bodily injury or property damages caused by a sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under subdivisions a through g; or

(3) A final court order establishing a judgment for bodily injury or property damage caused by a sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subdivisions a through g.

2. [Reserved]

3. [Reserved]

4. [Reserved]

5. Period of coverage. Within sixty days after receiving certifications from the owner or operator and a qualified professional engineer that final closure has been completed in accordance with the approved closure plan, the department will notify the owner or operator in writing that the owner or operator is no longer required by this section to maintain liability coverage from that facility, unless the department has reason to believe that closure has not been in accordance with the approved closure plan.

6. Financial test for liability coverage. An owner or operator that satisfies the requirements of this subsection may demonstrate financial assurance for liability up to the amount specified in this subsection:

a. Financial component.

(1) If using the financial test for only liability coverage, the owner or operator must have tangible net worth greater than the sum of the liability coverage to be demonstrated by this test plus ten million dollars.

(2) The owner or operator must have assets located in the United States amounting to at least the amount of liability covered by this financial test.

(3) An owner or operator who is demonstrating coverage for liability and any other environmental obligations, including closure under subsection 6 of section 33-24-05-1063, through a financial test must meet the requirements of subsection 6 of section 33-24-05-1063.

b. Recordkeeping and reporting requirements.

(1) The owner or operator must submit the following items to the department:

(a) A letter signed by the owner's or operator's chief financial officer that provides evidence demonstrating that the firm meets the conditions of paragraphs 1 and 2 of subdivision a. If the firm is providing only liability coverage through a financial test for a facility or facilities with a permit under sections 33-24-05-950 through 33-24-05-1149, the letter should use the wording in subsection 2 of section 33-24-05-1071. If the firm is providing only liability coverage through a financial test for facilities regulated under sections 33-24-05-950 through 33-24-05-1149 and also sections 33-24-05-01 through 33-24-05-190, 33-24-05-300 through 33-24-05-524, 33-24-05-550 through 33-24-05-559, and 33-24-05-800 through 33-24-05-819 or subsection 5 of section 33-24-06-16, the firm should use the letter in subsection 7 of section 33-24-05-81. If the firm is providing liability coverage through a financial test for a facility or facilities with a permit under sections 33-24-05-950 through 33-24-05-1149, and the firm assures closure costs or any other environmental obligations through a financial test, the firm must use the letter in subsection 1 of section 33-24-05-1071 for the facilities issued a permit under sections 33-24-05-950 through 33-24-05-1149.

(b) A copy of the independent certified public accountant's unqualified opinion of the owner's or operator's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion, disclaimer of opinion, or other qualified opinion will be cause for disallowance, with the potential exception for qualified opinions provided in the next sentence. The department may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where the department deems that the matters which form the basis for the qualification are insufficient to warrant disallowance of the test. If the department does not allow use of the test, the owner or operator must provide alternate financial assurance that meets the requirements of this section within thirty days after the notification of disallowance.

(c) If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that the owner or operator satisfies paragraphs 1 and 2 of subdivision a that are different from data in the audited financial statements referred to in subparagraph b or any other audited financial statement or data filed with the securities and exchange commission, then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year

with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

(2) The owner or operator of a new facility must submit the items specified in paragraph 1 to the department at least sixty days before placing waste in the facility.

(3) After the initial submission of items specified in paragraph 1, the owner or operator must send updated information to the department within ninety days following the close of the owner or operator's fiscal year. The department may provide up to an additional forty-five days for an owner or operator who can demonstrate that ninety days is insufficient time to acquire audited financial statements. The updated information must consist of all items specified in paragraph 1.

(4) The owner or operator is no longer required to submit the items specified in this subdivision or comply with the requirements of this subsection when:

(a) The owner or operator substitutes alternate financial assurance as specified in this section that is not subject to these recordkeeping and reporting requirements; or

(b) The department releases the owner or operator from the requirements of this subsection in accordance with subsection 5.

(5) An owner or operator who no longer meets the requirements of subdivision a cannot use the financial test to demonstrate financial assurance. An owner or operator who no longer meets the requirements of subdivision a, must:

(a) Send notice to the department of intent to establish alternate financial assurance as specified in this section. The owner or operator must send this notice by certified mail within ninety days following the close of the owner or operator's fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements of this subsection.

(b) Provide alternative financial assurance within one hundred twenty days after the end of such fiscal year.

(6) The department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subdivision a, require at any time the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in subdivision b. If the department finds that the owner or operator no longer meets the requirements of subdivision a, the owner or operator must provide alternate financial assurance that meets the requirements of this section.

7. Guarantee for liability coverage.

a. Subject to subdivision b, an owner or operator may meet the requirements of this section by obtaining a written guarantee, hereinafter referred to as "guarantee". The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in subdivisions a and b of subsection 6. The wording of the guarantee must be identical to the wording specified in subdivision b of subsection 8 of section 33-24-05-81. A certified copy of the guarantee must accompany the items sent to the department as specified in subdivision b of subsection 6. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator,

this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

(1) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden accidental occurrences arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage.

(2) [Reserved]

b. The following applies:

(1) In the case of corporations incorporated in the United States, a guarantee may be used to satisfy the requirements of this section only if the attorneys general or insurance commissioners of the state in which the guarantor is incorporated, and each state in which a facility covered by the guarantee is located, have submitted a written statement to the department that a guarantee executed as described in this section and subdivision b of subsection 8 of section 33-24-05-81 is a legally valid and enforceable obligation in that state.

(2) In the case of corporations incorporated outside the United States, a guarantee may be used to satisfy the requirements of this section only if:

(a) The non-United States corporation has identified a registered agent for service of process in each state in which a facility covered by the guarantee is located and in the state in which it has its principal place of business; and

(b) The attorney general or insurance commissioner of each state in which a facility covered by the guarantee is located and the state in which the guarantor corporation has its principal place of business, has submitted a written statement to the department that a guarantee executed as described in this section and subdivision b of subsection 8 of section 33-24-05-81 is a legally valid and enforceable obligation in that state.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1068. Incapacity of owners or operators, guarantors, or financial institutions.

1. An owner or operator must notify the department by certified mail of the commencement of a voluntary or involuntary proceeding under title 11 (bankruptcy), United States code, naming the owner or operator as debtor, within ten days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in subsection 7 of section 33-24-05-1063 and subsection 7 of section 33-24-05-1067 must make such a notification if the owner or operator is named as debtor, as required under the terms of the corporate guarantee (subsection 8 of section 33-24-05-81).

2. An owner or operator who fulfills the requirements of section 33-24-05-1063 or section 33-24-05-1067 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of

credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within sixty days after such an event.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1069. [Reserved].

33-24-05-1070. [Reserved].

33-24-05-1071. Wording of the instruments.

1. The chief financial officer of an owner or operator of a facility with a standardized permit who uses a financial test to demonstrate financial assurance for that facility must complete a letter as specified in subsection 6 of section 33-24-05-1063. The letter must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

   I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for closure costs, as specified in sections 33-24-05-1060 through 33-24-05-1079. This firm qualifies for the financial test on the basis of having [insert "a current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's" or "a ratio of less than 1.50 comparing total liabilities to net worth" or "a ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus ten million dollars, to total liabilities"].

   This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

   The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

   [If this firm qualifies on the basis of its bond rating fill in the requested information: "This firm has a rating of its senior unsecured debt of" [insert the bond rating] "from" [insert "Standard and Poor's" or "Moody's"].

   [Complete Line 1. Total Liabilities below and then skip the remaining questions in the next section and resume completing the form at the section entitled Obligations Covered by a Financial Test or Corporate Guarantee.]

   [If this firm qualifies for the financial test on the basis of its ratio of liabilities to net worth, or sum of income, depreciation, depletion, and amortization to net worth, please complete the following section.]

*1.	Total Liabilities	$
*2.	Net Worth	$
*3.	Net Income	$
*4.	Depreciation	$
*5.	Depletion (if applicable)	$

*6.	Amortization	$
*7.	Sum of Lines 3, 4, 5, and 6	$

[If the above figures are taken directly from the most recent audited financial statements for this firm insert "The above figures are taken directly from the most recent audited financial statements for this firm". If they are not, insert "The following items are not taken directly from the firms most recent audited financial statements" [insert the numbers of the items and attach an explanation of how they were derived].

[Complete the following calculations]

8.	Line 1. ÷ Line 2. =	$		
9.	Line 7. ÷ Line 1. =	$		
Is Line 8. less than 1.5?			Yes	No
Is Line 9. greater than 0.10?			Yes	No

[If the owner or operator did not answer Yes to either of these two questions, the owner or operator cannot use the financial test and need not complete this letter. Instead, the owner or operator must notify the department that the owner or operator intends to establish alternate financial assurance as specified in section 33-24-05-1063. The owner or operator must send this notice by certified mail within ninety days following the close of the owner"s or operator's fiscal year for which the yearend financial data show that the owner or operator no longer meets the requirements of this section. The owner or operator must also provide alternative financial assurance within one hundred twenty days after the end of such fiscal year].

Obligations Covered by a Financial Test or Corporate Guarantee

[On the following lines list all obligations that are covered by a financial test or a corporate guarantee extended by the owner's or operator's firm. The owner or operator may add additional lines and leave blank entries that do not apply to the owner's or operator's situation.]

Hazardous Waste Facility Name and ID	**State**	**Closure**	**Post-Closure**	**Corrective Action**
		$	$	$
		$	$	$
Hazardous Waste Third Party Liability				$

Municipal Waste Facilities	**State**	**Closure**	**Post-Closure**	**Corrective Action**
		$	$	$
		$	$	$

Underground Injection Control	**State**			**Plugging Action**
				$
Petroleum Underground Storage Tanks				$

PCB Storage Facility Name and ID	State	Closure
		$

Any financial assurance required under, or as part of an action undertaken under, the Comprehensive Environmental Response, Compensation, and Liability Act:

Site Name	**State**	**Amount**
		$

Any other environmental obligations that are assured through a financial test:

Name				Amount
				$

*10.	Total of all amounts	$		
*11.	Line 10. + $10,000,000 =	$		
*12.	Total Assets	$		
*13.	Intangible Assets	$		
*14.	Tangible Assets (Line 12. - Line 13.)	$		
*15.	Tangible Net Worth (Line 14. - Line 1.)	$		
*16.	Assets in the United States	$		
Is Line 15. greater than Line 11?			Yes	No
Is Line 16. no less than Line 10?			Yes	No

[The owner or operator must be able to answer Yes to both these questions to use the financial test for this facility.]

I hereby certify that the wording of this letter is identical to the wording specified in section 33-24-05-1071 as such rules were constituted on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

[After completion, a signed copy of the form must be sent to the department. In addition, a signed copy must be sent to every authority who requires a demonstration through a financial test for each of the other obligations in the letter that are assured through a financial test, or accepts a guarantee for an obligation listed in this letter.]

2. The chief financial officer of an owner or operator of a facility with a standardized permit who use a financial test to demonstrate financial assurance only for third party liability for that (or other standardized permit) facility or facilities must complete a letter as specified in subsection

6 of section 33-24-05-1067. The letter must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for third party liability, as specified in sections 33-24-05-1060 through 33-24-05-1079. This firm qualifies for the financial test on the basis of having tangible net worth of at least ten million dollars more than the amount of liability coverage and assets in the United States of at least the amount of liability coverage.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Please complete the following section.]

*1.	Total Assets	$		
*2.	Intangible Assets	$		
*3.	Tangible Assets (Line 1. - Line 2.)	$		
*4.	Total Liabilities	$		
5.	Tangible Net Worth (Line 3. - Line 4.)	$		
*6.	Assets in the United States	$		
7.	Amount of liability coverage	$		
Is Line 5. at least $10 million greater than Line 7?			Yes	No
Is Line 6. at least equal to Line 7?			Yes	No

[The owner or operator must be able to answer Yes to both these questions to use the financial test for this facility.]

I hereby certify that the wording of this letter is identical to the wording specified in section 33-24-05-1071 as such rules were constituted on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

[After completion, a signed copy of the form must be sent to the department.]

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1072. [Reserved].

33-24-05-1073. [Reserved].

33-24-05-1074. [Reserved].

33-24-05-1075. [Reserved].

33-24-05-1076. [Reserved].

33-24-05-1077. [Reserved].

33-24-05-1078. [Reserved].

33-24-05-1079. [Reserved].

33-24-05-1080. Applicability of requirements for use and management of containers.

Sections 33-24-05-1080 through 33-24-05-1099 applies to owners or operators of facilities that treat or store hazardous waste in containers under sections 33-24-06-45 through 33-24-06-85, except as provided in subsection 2 of section 33-24-05-950.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1081. Container standards.

Standards apply to the condition of the containers, to the compatibility of waste with the containers, and to the management of the containers.

1. Condition of containers. If a container holding hazardous waste is not in good condition (for example, it exhibits severe rusting or apparent structural defects) or if it begins to leak, the owner or operator must either:

    a. Transfer the hazardous waste from this container to a container that is in good condition; or

    b. Manage the waste in some other way that complies with the requirements of sections 33-24-05-950 through 33-24-05-1149.

2. Compatibility of waste with containers. To ensure that the ability of the container to contain the waste is not impaired, the owner or operator must use a container made of or lined with materials that are compatible and will not react with the hazardous waste to be stored.

3. Management of containers.

    a. The owner or operator must always keep a container holding hazardous waste closed during storage, except when it is necessary to add or remove waste.

    b. The owner or operator must never open, handle, or store a container holding hazardous waste in a manner that may rupture the container or cause it to leak.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03

Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1082. Inspections.

At least weekly, the owner or operator must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1083. Containment.

1. Container storage areas must have a containment system that is designed and operated in accordance with subsection 2, except as provided otherwise in subsection 3.

2. The containment system must be designed and operated as follows:

   a. A base must underlie the containers that is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

   b. The base must be sloped or the containment system, must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.

   c. The containment system must have sufficient capacity to contain ten percent of the volume of containers, or the volume of the largest container, whichever is greater. This requirement does not apply to containers that do not contain free liquids.

   d. Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity, in addition to that required in subdivision c, to contain the liquid.

   e. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area as promptly as is necessary to prevent overflow of the collection system.

3. Storage areas that store containers holding only wastes with no free liquids need not have a containment system as defined in subsection 2, except as provided by subsection 4, if:

   a. The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation; or

   b. The containers are elevated or are otherwise protected from contact with accumulated liquid.

4. Storage areas that store containers holding F020, F021, F022, F023, F026, and F027 wastes that do not contain free liquids must have a containment system as defined by subsection 2.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1084. Special requirements for ignitable or reactive wastes.

Containers holding ignitable or reactive waste must be located at least fifteen meters (fifty feet) from the facility's property line. The owner or operator must also follow the general requirements for ignitable or reactive wastes that are specified in subsection 1 of section 33-24-05-967.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1085. Special requirements for incompatible wastes.

1. Incompatible wastes, or incompatible wastes and materials (see appendix III to chapter 33-24-05 for examples), must not be placed in the same container, unless subsection 2 of section 33-24-05-967 is complied with.

2. Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material.

3. A storage container holding a hazardous waste that is incompatible with any waste or with other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1086. Closure.

At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1087. Air emission standards.

The owner or operator shall manage all hazardous waste placed in a container in accordance with the requirements of sections 33-24-05-400 through 33-24-05-474. Under a standardized permit, the following control devices are permissible: thermal vapor incinerator, catalytic vapor incinerator, flame, boiler, process heater, condenser, and carbon absorption unit.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1088. [Reserved].

33-24-05-1089. [Reserved].

33-24-05-1090. [Reserved].

33-24-05-1091. [Reserved].

33-24-05-1092. [Reserved].

33-24-05-1093. [Reserved].

33-24-05-1094. [Reserved].

33-24-05-1095. [Reserved].

33-24-05-1096. [Reserved].

33-24-05-1097. [Reserved].

33-24-05-1098. [Reserved].

33-24-05-1099. [Reserved].

33-24-05-1100. Applicability of tank requirements.

The requirements of sections 33-24-05-1100 through 33-24-05-1129 applies to owners or operators of facilities that treat or store hazardous waste in above ground or on ground tanks under sections 33-24-06-45 through 33-24-06-85, standardized permit, except as provided in subsection 2 of section 33-24-05-950.

1. Tank systems which contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in section 33-24-05-1105. To demonstrate the absence or presence of free liquids in the stored or treated waste, the following test must be used: method 9095B (paint filter liquids test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05.

2. Tank systems, including sumps, as defined in section 33-24-01-04, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements of subsection 1 of section 33-24-05-1105.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1101. Design and construction standards for new tank systems or components.

Owners or operators must ensure that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the wastes to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. The owner or operator must obtain a written assessment, reviewed and certified by a qualified professional engineer, in accordance with subsection 4 of section 33-24-06-03, attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. This assessment must include, at a minimum, the following information:

1. Design standards for the construction of tanks or the ancillary equipment, or both.

2. Hazardous characteristics of the wastes to be handled.

3. For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:

   a. Factors affecting the potential for corrosion, such as:

      (1) Soil moisture content.

      (2) Soil pH.

      (3) Soil sulfides level.

      (4) Soil resistivity.

      (5) Structure to soil potential.

      (6) Existence of stray electric current.

      (7) Existing corrosion protection measures (for example, coating, cathodic protection).

   b. The type and degree of external corrosion protection needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

      (1) Corrosion resistant materials of construction such as special alloys, fiberglass reinforced plastic;

      (2) Corrosion resistant coating (such as epoxy, fiberglass) with cathodic protection (for example, impressed current or sacrificial anodes); and

      (3) Electrical isolation devices such as insulating joints, flanges.

4. Design considerations to ensure that:

   a. Tank foundations will maintain the load of a full tank.

   b. Tank systems will withstand the effects of frost heave.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1102. Handling and inspection procedures during installation of a new tank system.

1. The owner or operator shall ensure that proper handling procedures are followed to prevent damage to a new tank system during installation. Before placing a new tank system or component in use an independent, qualified installation inspector or a qualified professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system for the presence of any of the following items:

   a. Weld breaks.

   b. Punctures.

   c. Scrapes of protective coatings.

   d. Cracks.

e. Corrosion.

f. Other structural damage or inadequate construction or installation.

2. The owner or operator must remedy all discrepancies before the tank system is placed in use.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1103. Testing.

All new tanks and ancillary equipment must be tested for tightness before being placed into use. If a tank system is found not to be tight, all repairs necessary to remedy the leaks in the system must be performed prior to covering, enclosing, or placing the tank system into use.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1104. Installation requirements.

1. The owner or operator must support and protect ancillary equipment against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

2. The owner or operator must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under subsection 3 of section 33-24-05-1101, to ensure the integrity of the tank system during use of the tank system. An independent corrosion expert must supervise the installation of a corrosion protection system that is field fabricated to ensure proper installation.

3. The owner or operator must obtain, and keep at the facility, written statements by those persons required to certify the design of the tank system and to supervise the installation of the tank system as required in sections 33-24-05-1102, 33-24-05-1103, and subsections 1 and 2. The written statement must attest that the tank system was properly designed and installed and that the owner or operator made repairs under sections 33-24-05-1102 and 33-24-05-1103. These written statements must also include the certification statement as required in subsection 4 of section 33-24-06-03.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1105. Secondary containment requirements.

To prevent the release of hazardous waste or hazardous constituents to the environment, the owner or operator must provide secondary containment that meets the requirements of this section for all new and existing tank systems.

1. Secondary containment systems must be:

   a. Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and

   b. Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

2. To meet the requirements of subsection 1, secondary containment systems must be, at a minimum:

   a. Constructed of or lined with materials that are compatible with the wastes to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including stresses from nearby vehicular traffic).

   b. Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift.

   c. Provided with a leak detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within twenty-four hours.

   d. Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within twenty-four hours, or as promptly as possible, to prevent harm to human health and the environment.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1106. Secondary containment devices.

1. Secondary containment for tanks must include one or more of the following:

   a. A liner (external to the tank).

   b. A double-walled tank.

   c. An equivalent device (documentation of equivalency must be maintained at the facility).

2. External liner systems must be:

   a. Designed or operated to contain one hundred percent of the capacity of the largest tank within its boundary.

   b. Designed or operated to prevent run on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run on or infiltration. The additional capacity must be sufficient to contain precipitation from a twenty-five year, twenty-four hour rainfall event.

   c. Free of cracks or gaps.

   d. Designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tanks (capable of preventing lateral as well as vertical migration of the waste).

3. Double-walled tanks must be:

   a. Designed as an integral structure (an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell.

b. Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell.

c. Provided with a built-in continuous leak detection system capable of detecting a release within twenty-four hours.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1107. Requirements for ancillary equipment.

An owner or operator must provide ancillary equipment with secondary containment (for example, trench, jacketing, doublewalled piping) that meets the requirements of subsections 1 and 2 of section 33-24-05-1105, except for:

1. Above ground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;

2. Welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;

3. Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and

4. Pressurized above ground piping systems with automatic shutoff devices (for example, excess flow check valves, flow metering shutdown devices, loss of pressure actuated shutoff devices) that are visually inspected for leaks on a daily basis.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1108. General operating requirements.

1. Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.

2. The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:

   a. Spill prevention controls (for example, check valves, dry disconnect couplings).

   b. Overfill prevention controls (for example, level sensing devices, high-level alarms, automatic feed cutoff, or bypass to a standby tank).

   c. Sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

3. The owner or operator must comply with the requirements of section 33-24-05-1110 if a leak or spill occurs in the tank system.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1109. Inspections.

1. The owner or operator shall develop and follow a schedule and procedure for inspecting overfill controls.

2. The owner or operator shall inspect at least once each operating day:

   a. Aboveground portions of the tank system to detect corrosion or releases of waste.

   b. Data gathered from monitoring and leak detection equipment (for example, pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

   c. The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (for example, dikes) to detect erosion or signs of releases of hazardous waste (for example, wet spots, dead vegetation).

3. The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

   a. Confirm that the cathodic protection system is operating properly within six months after initial installation and annually thereafter.

   b. Inspect or test, or both, all sources of impressed current, as appropriate, at least every other month.

4. The owner or operator shall document, in the operating record of the facility, an inspection of those items in subsections 1 through 3.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1110. Response to leaks or spills.

A tank system or secondary containment system from which there has been a leak or spill, or if either system is unfit for use, the owner or operator must remove the system from service immediately, and must satisfy the following requirements:

1. Immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

2. Remove the waste from the tank system or secondary containment system.

   a. If the release was from the tank system, the owner or operator must, within twenty-four hours after detecting the leak, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

   b. If the material released was to a secondary containment system, all released materials must be removed within twenty-four hours or as quickly as possible to prevent harm to human health and the environment.

3. Immediately conduct a visual inspection of the release and, based upon that inspection:

   a. Prevent further migration of the leak or spill to soils or surface water.

b. Remove, and properly dispose of, any visible contamination of the soil or surface water.

4. Report any release to the environment, except as provided in subdivision a, to the department within twenty-four hours of its detection. The release should also be reported pursuant to 40 CFR part 302.

   a. A leak or spill of hazardous waste is exempted from this subsection if it is:

      (1) Less than or equal to a quantity of one pound; and

      (2) Immediately contained and cleaned up.

   b. Within thirty days of detection of a release to the environment, a report containing the following information must be submitted to the department:

      (1) Likely route of migration of the release.

      (2) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate).

      (3) Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within thirty days, these data must be submitted to the department as soon as they become available.

      (4) Proximity to downgradient drinking water, surface water, and populated areas.

      (5) Description of response actions taken or planned.

5. Either close the system or make necessary repairs.

   a. Unless the owner or operator satisfies the requirements of subdivisions b and c, the tank system must be closed according to section 33-24-05-1111.

   b. If the cause of the release was a spill that has not damaged the integrity of the system, the owner or operator may return the system to service as soon as the released waste is removed and any necessary repairs are made.

   c. If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired before returning the tank system to service.

6. If the owner or operator has made extensive repairs to a tank system in accordance with subsection 5 (for example, installation of an internal liner, repair of a ruptured primary containment or secondary containment vessel), the tank system may not be returned to service unless the owner or operator has obtained a certification by a qualified professional engineer in accordance with subsection 4 of section 33-24-06-03.

   a. The engineer must certify that the repaired system is capable of handling hazardous wastes without release for the intended life of the system.

   b. This certification must be submitted to the department within seven days after returning the tank system to use.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1111. Closure.

At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless subsection 4 of section 33-24-02-03 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in sections 33-24-05-1040 through 33-24-05-1079.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1112. Special requirements for ignitable or reactive wastes.

1. Ignitable or reactive wastes may not be placed in tank systems, unless:

   a. The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

      (1) Subsection 2 of section 33-24-05-967 is complied with; and

      (2) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under section 33-24-02-11 or 33-24-02-13; or

   b. The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

   c. The tank system is used solely for emergencies.

2. The owner or operator of the facility where ignitable or reactive waste is stored or treated in a tank, must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in tables 2-1 through 2-6 of the national fire protection association's "flammable and combustible liquids code," (1977 or 1981), incorporated by reference, see section 33-24-01-05.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1113. Special requirements for incompatible wastes.

1. Incompatible wastes, or incompatible wastes and materials, may not be placed in the same tank system, unless subsection 2 of section 33-24-05-967 is complied with.

2. Hazardous waste may not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless subsection 2 of section 33-24-05-967 is complied with.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1114. Air emission standards.

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the requirements of sections 33-24-05-400 through 33-24-05-474. Under a standardized permit, the

following control devices are permissible: thermal vapor incinerator, catalytic vapor incinerator, flame, boiler, process heater, condenser, and carbon absorption unit.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1115. [Reserved].

33-24-05-1116. [Reserved].

33-24-05-1117. [Reserved].

33-24-05-1118. [Reserved].

33-24-05-1119. [Reserved].

33-24-05-1120. [Reserved].

33-24-05-1121. [Reserved].

33-24-05-1122. [Reserved].

33-24-05-1123. [Reserved].

33-24-05-1124. [Reserved].

33-24-05-1125. [Reserved].

33-24-05-1126. [Reserved].

33-24-05-1127. [Reserved].

33-24-05-1128. [Reserved].

33-24-05-1129. [Reserved].

33-24-05-1130. Applicability of containment building requirements.

The requirements of sections 33-24-05-1130 through 33-24-05-1149 applies to owners or operators of facilities that treat or store hazardous waste in containment buildings under sections 33-24-06-45 through 33-24-06-85, standardized permit, except as provided in subsection 2 of section 33-24-05-950. Storage or treatment, or both, in a containment building is not land disposal as defined in section 33-24-05-251 if the unit meets the requirements of sections 33-24-05-1131, 33-24-05-1132, and 33-24-05-1133.

History: Effective January 1, 2016.

General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1131. Design and operating standards for containment buildings.

All containment buildings must comply with the design and operating standards in this section. The department will consider standards established by professional organizations generally recognized by the industry such as the American concrete institute and the American society of testing materials in judging the structural integrity requirements of this section.

1. The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (for example, precipitation, wind, run on), and to assure containment of managed wastes.

2. The floor and containment walls of the unit, including the secondary containment system, if required under section 33-24-05-1133, must be designed and constructed of manmade materials of sufficient strength and thickness to:

   a. Support themselves, the waste contents, and any personnel and heavy equipment that operates within the unit.

   b. Prevent failure due to:

      (1) Pressure gradients, settlement, compression, or uplift.

      (2) Physical contact with the hazardous wastes to which they are exposed.

      (3) Climatic conditions.

      (4) Stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls.

      (5) Collapse or other failure.

3. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes.

4. Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

5. A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

6. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light weight doors and windows that meet these criteria:

   a. They provide an effective barrier against fugitive dust emissions under subsection 4 of section 33-24-05-1132.

   b. The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

7. The owner or operator must inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment, as

well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

8. The owner or operator must obtain certification by a qualified professional engineer that the containment building design meets the requirements of sections 33-24-05-1132, 33-24-05-1133, and subsections 1 through 6.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1132. Requirements to prevent releases.

Owners or operators must use controls and practices to ensure containment of the hazardous waste within the unit, and must, at a minimum:

1. Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier.

2. Maintain the level of the stored or treated, or both, hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded.

3. Take measures to prevent tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed.

4. Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks) exhibit no visible emissions (see 40 CFR part 60, appendix A, Method 22 - visual determination of fugitive emissions from material sources and smoke emissions from flares). In addition, all associated particulate collection devices (for example, fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1133. Design and operating standards for liquids.

If the containment building will be used to manage hazardous wastes containing free liquids or treated with free liquids, as determined by the paint filter test, by a visual examination, or by other appropriate means, the owner or operator must include:

1. A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (for example, a geomembrane covered by a concrete wear surface).

2. A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building.

    a. The primary barrier must be sloped to drain liquids to the associated collection system; and

    b. Liquids and waste must be removed to minimize hydraulic head on the containment system at the earliest practicable time.

3. A secondary containment system, including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practical time.

   a. The requirements of the leak detection component of the secondary containment system may be met by installing a system that is, at a minimum:

      (1) Constructed with a bottom slope of one percent or more; and

      (2) Constructed of a granular drainage material with a hydraulic conductivity of $1x10^{-2}$ centimeters per second or more and a thickness of twelve inches (thirty and one-half centimeters) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of $3x10^{-5}$ meters squared per second or more.

   b. If treatment will be conducted in the building, the area in which the treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

   c. The secondary containment system must be constructed using materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1134. Waiver from secondary containment requirements.

Notwithstanding any other provision of sections 33-24-05-1130 through 33-24-05-1149, the department may waive requirements for secondary containment for a permitted containment building where:

1. The owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements; and

2. Containment of managed wastes and dust suppression liquids can be assured without a secondary containment system.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1135. Containment building containing areas both with and without secondary containment.

Containment buildings that contain areas both with and without secondary containment, the owner or operator must:

1. Design and operate each area in accordance with the requirements in sections 33-24-05-1131 through 33-24-05-1133.

2. Take measures to prevent the release of liquids or wet materials into areas without secondary containment.

3. Maintain in the facility's operating record a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1136. Detection of releases.

Throughout the active life of the containment building, if a condition that could lead to or has caused a release of hazardous waste is detected, the owner or operator must repair the condition promptly, in accordance with the following procedures:

1. Upon detection of a condition that has lead to a release of hazardous waste (for example, upon detection of leakage from the primary barrier), the owner or operator must:

   a Enter a record of the discovery in the facility operating record;

   b. Immediately remove the portion of the containment building affected by the condition from service;

   c. Determine what steps must be taken to repair the containment building, to remove any leakage from the secondary collection system, and to establish a schedule for accomplishing the cleanup and repairs; and

   d. Within seven days after the discovery of the condition, notify the department of the condition, and within fourteen working days, provide a written notice to the department with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

2. The department will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

3. Upon completing all repairs and cleanup, the owner or operator must notify the department in writing and provide a verification, signed by a qualified professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with subdivision d of subsection 1.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1137. Containment buildings used for secondary containment.

Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions.

1. A containment building can serve as an external liner system for a tank, provided it meets the requirements of subsection 1 of section 33-24-05-1106.

2. The containment building must also meet the requirements of subsection 1 and subdivisions a and b of subsection 2 of section 33-24-05-1105 to be considered an acceptable secondary containment system for a tank.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1138. Closure.

At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless subsection 4 of section 33-24-02-03 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in sections 33-24-05-1040 through 33-24-05-1059 and 33-24-05-1060 through 33-24-05-1079.

History: Effective January 1, 2016.
General Authority: NDCC 23-20.3-03
Law Implemented: NDCC 23-20.3-03, 23-20.3-04, 23-20.3-05

33-24-05-1139. [Reserved].

33-24-05-1140. [Reserved].

33-24-05-1141. [Reserved].

33-24-05-1142. [Reserved].

33-24-05-1143. [Reserved].

33-24-05-1144. [Reserved].

33-24-05-1145. [Reserved].

33-24-05-1146. [Reserved].

33-24-05-1147. [Reserved].

33-24-05-1148. [Reserved].

33-24-05-1149. [Reserved].

33-24-05-1150. [Reserved].

33-24-05-1151. [Reserved].

33-24-05-1152. [Reserved].

33-24-05-1153. [Reserved].

33-24-05-1154. [Reserved].

33-24-05-1155. [Reserved].

33-24-05-1156. [Reserved].

33-24-05-1157. [Reserved].

33-24-05-1158. [Reserved].

33-24-05-1159. [Reserved].

33-24-05-1160. [Reserved].

33-24-05-1161. [Reserved].

33-24-05-1162. [Reserved].

33-24-05-1163. [Reserved].

33-24-05-1164. [Reserved].

33-24-05-1165. [Reserved].

33-24-05-1166. [Reserved].

33-24-05-1167. [Reserved].

33-24-05-1168. [Reserved].

33-24-05-1169. [Reserved].

APPENDIX I

Recordkeeping Instructions

The recordkeeping instructions of section 33-24-05-40 specify that an owner or operator must keep a written operating record at the facility. This appendix provides additional instructions for keeping portions of the operating record. See subsection 2 of section 33-24-05-40 for additional recordkeeping requirements.

The following information must be recorded as it becomes available and maintained in the operating record until closure of the facility in the following manner:

Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

1. A description by its common name and the hazardous waste numbers from chapter 33-24-02 which apply to the waste. The waste description must also include the wastes' physical form, for example, liquid, sludge, soil or contained gas. If the waste is not listed in chapter 33-24-02 the description must also include the process that produced it (for example, solid filter cake from the production of _____, hazardous waste number W051).

   Each hazardous waste listed in and each hazardous waste characteristic defined in chapter 33-24-02 has a four-digit hazardous waste number assigned to it. This number must be used for recordkeeping and reporting purposes. Where more than one hazardous waste number applies, the waste description must include all applicable numbers.

2. The estimated or manifest-reported weight or volume and density, where applicable, in one of the units of measure specified in table 1.

3. The methods (by handling codes as specified in table 2) and the dates of treatment, storage, or disposal.

Appendix I - Table 1.

Unit of Measure	Code[1]
Gallons	G
Gallons per hour	E
Gallons per day	U
Liters	L
Liters per hour	H
Liters per day	V
Short tons per hour	D
Metric tons per hour	W
Short tons per day	N
Metric tons per day	S
Pounds per hour	J
Kilograms per hour	R
Cubic yards	Y
Cubic meters	C

Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btus per hour	I
Pounds	P
Short Tons	T
Kilograms	K
Tons	M

FOOTNOTE: [1]Single digit symbols are used here for data processing purposes.

APPENDIX I (continued)

Table 2. Handling Codes for Treatment, Storage, and Disposal Methods. Enter the handling code listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

1. Storage	
S01	Container (barrel, drum, etc.)
S02	Tank
S03	Waste pile
S04	Surface impoundment
S05	Drip pad
S06	Containment building (storage)
S99	Other storage (specify)
2. Thermal Treatment	
T06	Liquid injection incinerator
T07	Rotary kiln incinerator
T08	Fluidized bed incinerator
T09	Multiple hearth incinerator
T10	Infrared furnace incinerator
T11	Molten salt destructor
T12	Pyrolysis
T13	Wet air oxidation
T14	Calcination
T15	Microwave discharge
T18	Other (specify)
3. Chemical Treatment	
T19	Absorption mound

Table 2. Handling Codes for Treatment, Storage, and Disposal Methods. Enter the handling code listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

T20	Absorption field
T21	Chemical fixation
T22	Chemical oxidation
T23	Chemical precipitation
T24	Chemical reduction
T25	Chlorination
T26	Chlorinolysis
T27	Cyanide destruction
T28	Degradation
T29	Detoxification
T30	Ion exchange
T31	Neutralization
T32	Ozonation
T33	Photolysis
T34	Other (specify)
4. Physical Treatment by Separation of Components	
T35	Centrifugation
T36	Clarification
T37	Coagulation
T38	Decanting
T39	Encapsulation
T40	Filtration
T41	Flocculation
T42	Flotation
T43	Foaming
T44	Sedimentation
T45	Thickening
T46	Ultrafiltration
T47	Other (specify)
5. Physical Treatment by Removal of Specific Components	
T48	Absorption-molecular sieve
T49	Activated carbon
T50	Blending
T51	Catalysis

Table 2. Handling Codes for Treatment, Storage, and Disposal Methods. Enter the handling code listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

T52	Crystallization
T53	Dialysis
T54	Distillation
T55	Electrodialysis
T56	Electrolysis
T57	Evaporation
T58	High gradient magnetic separation
T59	Leaching
T60	Liquid ion exchange
T61	Liquid-liquid extraction
T62	Reverse osmosis
T63	Solvent recovery
T64	Stripping
T65	Sand filter
T66	Other (specify)
6. Biological Treatment	
T67	Activated sludge
T68	Aerobic lagoon
T69	Aerobic tank
T70	Anaerobic tank
T71	Composting
T72	Septic tank
T73	Spray irrigation
T74	Thickening filter
T75	Trickling filter
T76	Waste stabilization pond
T77	Other (specify)
T78	[Reserved]
T79	[Reserved]
7. Boilers and Industrial Furnaces	
T80	Boiler
T81	Cement kiln
T82	Lime kiln
T83	Aggregate kiln

Table 2. Handling Codes for Treatment, Storage, and Disposal Methods. Enter the handling code listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

T84	Phosphate kiln
T85	Coke oven
T86	Blast furnace
T87	Smelting, melting, or refining furnace
T88	Titanium dioxide chloride process oxidation reactor
T89	Methane reforming furnace
T90	Pulping liquor recovery furnace
T91	Combustion device used in the recovery of sulfur values from spent sulfuric acid
T92	Halogen acid furnaces
T93	Other industrial furnaces listed in section 33-24-01-04 (specify)
8. Other treatment	
T94	Containment building (treatment)
9. Disposal	
D79	Underground injection
D80	Landfill
D81	Land treatment
D82	Ocean disposal
D83	Surface impoundment (to be closed as a landfill)
D99	Other disposal (specify)
10. Miscellaneous Units	
X01	Open burning/open detonation
X02	Mechanical processing
X03	Thermal unit
X04	Geologic repository
X99	Other miscellaneous unit (specify)

APPENDIX II

Cochran's Approximation to the Behrens-Fisher Student's T-Test

Using all the available background data (n_b readings) calculate the background mean (X_b) and background variance (S_B^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean (X_m) and monitoring variance (S_m^2). For any set of data (X_1, X_2... X_n) the mean is calculated by:

$$\overline{X} = \frac{X_1 + X_2 \ldots + X_n}{n}$$

And the variance is calculated by:

$$S^2 = \frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 \ldots + (X_n - \overline{X})^2}{n-1}$$

Where "n" denotes the number of observations in the set of data.

The T-Test uses these data summary measures to calculate a T-statistic (T*) and a comparison T-statistic (T_c). The T* is compared to the T_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The T-statistic for all parameters, except pH and similar monitoring parameters, is:

$$T^* = \frac{X_m - \overline{X}_B}{\sqrt{\frac{S_m^2}{n_m} + \frac{S_B^2}{n_B}}}$$

If the value of this T-statistic is negative, then there is no significant difference between the monitoring data and the background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The T-statistic (T_c) against which T* will be compared necessitates finding T_b and T_m from standard (one-tailed) tables where:

T_B = T-tables (n_b - 1) degrees of freedom at the 0.05 level of significance.

T_m = T-tables with (n_m - 1) degrees of freedom at the 0.05 level of significance.

Finally, the special weightings W_B and W_m are defined as:

$$W_B = \frac{S_B^{\ 2}}{n_B} \; and \; W_m = \frac{S_m^{\ 2}}{n_m}$$

And so the comparison T-statistic is:

$$T_c = \frac{W_B \; T_B + W_m \; T_m}{W_B + W_m}$$

The T-statistic (T^*) is now compared with the comparison T-statistic (T_c) using the following decision rule:

> If T^* is equal to or larger than T_c, then conclude that there most likely has been a significant increase in this specific parameter. If T^* is less than T_c, then conclude that most likely there has not been a change in this specific parameter.

The T-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described, except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction T_c for pH and similar monitoring parameters.

If T^* is equal to or larger than T_c, then conclude that there most likely has been a significant increase (if the initial T^* had been negative, this would imply a significant decrease).

If T^* is less than T_c then conclude that there most likely has been no change.

A further discussion of the test may be found in STATISTICAL METHODS (6th Edition, Section 4.14) by G. W. Snedecor and W. G. Cochran, or PRINCIPLES AND PROCEDURES OF STATISTICS (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.**APPENDIX II (continued)**

Cochran's Approximation to the Behrens-Fisher Student's T-Test

Standard T-Tables
0.05 Level of Significance

Degrees of Freedom	T-Values (1-tailed)	T-Values (2-tailed)
1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365

8	1.860	2.306
9	1.833	2.262
10	1.812	2.228
11	1.796	2.201
12	1.782	2.179
13	1.771	2.160
14	1.761	2.145
15	1.753	2.131
16	1.746	2.120
17	1.740	2.110
18	1.734	2.101
19	1.729	2.093
20	1.725	2.086
21	1.721	2.080
22	1.717	2.074
23	011.714	2.069
24	1.711	2.064
25	1.708	2.060
30	1.697	2.042
40	1.684	2.021

Taken from 40 CFR, Part 264, Appendix IV, 47FR34329, July 26, 1982.

APPENDIX III

Examples of Potentially Incompatible Waste

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (for example, adding acid to water rather than water to acid) or that neutralizes them (for example, a strong acid mixed with a strong base), or that controls substances produced (for example, by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A

Acetylene sludge

Alkaline caustic liquids

Alkaline cleaner

Alkaline corrosive liquids

Alkaline corrosive battery fluid

Caustic wastewater

Lime sludge and other corrosive alkalies

Lime wastewater

Lime and water

Spent caustic

Group 1-B

Acid sludge

Acid and water

Battery acid

Chemical cleaners

Electrolyte, acid

Etching acid liquid or solvent

Pickling liquor and other corrosive acids

Spent acid

Spent mixed acid

Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2-A

Aluminum

Beryllium

Calcium

Lithium

Magnesium

Potassium

Sodium

Zinc powder

Other reactive metals and metal hydrides

Group 2-B

Any Waste in Group 1-A or 1-B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A

Alcohols

Water

Group 3-B

Any concentrated waste in Groups 1-A or 1-B

Calcium

Lithium

Metal hydrides

Potassium

SO_2Cl_2, $SOCl_2$, PCl_3,

CH_3SiCl_3

Other water-reactive waste (potential consequences):

Fire, explosion, or heat generation; generation of flammable or toxic gases.

APPENDIX III (continued)
Examples of Potentially Incompatible Waste

Group 4-A

Alcohols

Aldehydes

Halogenated hydrocarbons

Nitrated hydrocarbons

Unsaturated hydrocarbons

Other reactive organic compounds and solvents

Group 4-B

Concentrated Group 1-A or 1-B wastes

Group 2-A wastes

Potential consequences: Fire, explosion, or violent reaction.

Group 5-A

Spent cyanide and sulfide solutions

Group 5-B

Group 1-B wastes

Potential consequences: generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A

Chlorates

Chlorine

Chlorites

Chromic acid

Hypochlorites

Nitrates

Nitric acid, fuming

Perchlorates

Permanganates

Peroxides

Other strong oxidizers

Group 6-B

Acetic acid and other organic acids

Concentrated mineral acids

APPENDIX III (continued)
Examples of Potentially Incompatible Waste

Group 2-A wastes

Group 4-A wastes

Other flammable and combustible wastes

Potential consequences: Fire, explosion, or violent reaction.

APPENDIX IV

Notification of Hazardous Waste Activity Form (page 1 of 2)

OMB# 2050-0024; Expires 12/31/2014

SEND COMPLETED FORM TO: The Appropriate State or Regional Office.	United States Environmental Protection Agency **RCRA SUBTITLE C SITE IDENTIFICATION FORM**
1. Reason for Submittal MARK ALL BOX(ES) THAT APPLY	**Reason for Submittal:** ☐ To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location) ☐ To provide a Subsequent Notification (to update site identification information for this location) ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application ☐ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____) ☐ As a component of the Hazardous Waste Report (If marked, see sub-bullet below) ☐ Site was a TSD facility and/or generator of ≥1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)
2. Site EPA ID Number	**EPA ID Number** | | | | | | | | | | | |
3. Site Name	**Name:**
4. Site Location Information	**Street Address:** **City, Town, or Village:** / **County:** **State:** / **Country:** / **Zip Code:**
5. Site Land Type	☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other
6. NAICS Code(s) for the Site (at least 5-digit codes)	A. | | | | | | C. | | | | | | B. | | | | | | D. | | | | | |
7. Site Mailing Address	**Street or P.O. Box:** **City, Town, or Village:** **State:** / **Country:** / **Zip Code:**
8. Site Contact Person	**First Name:** / **MI:** / **Last:** **Title:** **Street or P.O. Box:** **City, Town or Village:** **State:** / **Country:** / **Zip Code:** **Email:** **Phone:** / **Ext.:** / **Fax:**
9. Legal Owner and Operator of the Site	A. Name of Site's Legal Owner: / **Date Became Owner:** **Owner Type:** ☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other **Street or P.O. Box:** **City, Town, or Village:** / **Phone:** **State:** / **Country:** / **Zip Code:** B. Name of Site's Operator: / **Date Became Operator:** **Operator Type:** ☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

EPA Form 8700-12, 8700-13 A/B, 8700-23 (Revised 12/2011) Page 1 of ___

APPENDIX IV

Notification of Hazardous Waste Activity Form (page 2 of 2) Note: Revised Form

EPA ID Number | | | | | | | | | | | | OMB#: 2050-0024; Expires 12/31/2014

10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-10.

Y ☐ N ☐ **1. Generator of Hazardous Waste**
If "Yes", mark only one of the following – a, b, or c.

☐ a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs./mo.) or more of hazardous waste; **or** Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs./mo) of acute hazardous waste; **or** Generates, in any calendar month, **or** accumulates at any time, more than 100 kg/mo (220 lbs./mo) of acute hazardous spill cleanup material.

☐ b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs./mo) of non-acute hazardous waste.

☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities in 2-4.

Y ☐ N ☐ **2. Short-Term Generator** (generate from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section.

Y ☐ N ☐ **3. United States Importer of Hazardous Waste**

Y ☐ N ☐ **4. Mixed Waste (hazardous and radioactive) Generator**

Y ☐ N ☐ **5. Transporter of Hazardous Waste**
If "Yes", mark all that apply.

☐ a. Transporter

☐ b. Transfer Facility (at your site)

Y ☐ N ☐ **6. Treater, Storer, or Disposer of Hazardous Waste** Note: A hazardous waste Part B permit is required for these activities.

Y ☐ N ☐ **7. Recycler of Hazardous Waste**

Y ☐ N ☐ **8. Exempt Boiler and/or Industrial Furnace**
If "Yes", mark all that apply.

☐ a. Small Quantity On-site Burner Exemption

☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☐ **9. Underground Injection Control**

Y ☐ N ☐ **10. Receives Hazardous Waste from Off-site**

B. Universal Waste Activities; Complete all parts 1-2.

Y ☐ N ☐ **1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes", mark all that apply.**

a. Batteries ☐
b. Pesticides ☐
c. Mercury containing equipment ☐
d. Lamps ☐
e. Other (specify) _____ ☐
f. Other (specify) _____ ☐
g. Other (specify) _____ ☐

Y ☐ N ☐ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

Y ☐ N ☐ **1. Used Oil Transporter**
If "Yes", mark all that apply.

☐ a. Transporter

☐ b. Transfer Facility (at your site)

Y ☐ N ☐ **2. Used Oil Processor and/or Re-refiner**
If "Yes", mark all that apply.

☐ a. Processor

☐ b. Re-refiner

Y ☐ N ☐ **3. Off-Specification Used Oil Burner**

Y ☐ N ☐ **4. Used Oil Fuel Marketer**
If "Yes", mark all that apply.

☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner

☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

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D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

- You can **ONLY** Opt into Subpart K if:
  - you are at least one of the following: a college or university; a teaching hospital that is owned by or has a formal affiliation agreement with a college or university; or a non-profit research institute that is owned by or has a formal affiliation agreement with a college or university; AND
  - you have checked with your State to determine if 40 CFR Part 262 Subpart K is effective in your state

Y☐ N☐ 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories **See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:**

☐ a. College or University

☐ b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university

☐ c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university

Y☐ N☐ 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

12. Notification of Hazardous Secondary Material (HSM) Activity

Y☐ N☐ Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes", you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)

EPA ID Number | | | | | | | | | | | | OMB#: 2050-0024; Expires 12/31/2014

ADDENDUM TO THE SITE IDENTIFICATION FORM:

NOTIFICATION OF HAZARDOUS SECONDARY MATERIAL ACTIVITY

ONLY fill out this form if:

- You are located in a State that allows you to manage excluded hazardous secondary material (HSM) under 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent). See http://www.epa.gov/epawaste/hazard/dsw/statespf.htm for a list of eligible states; **AND**
- You are or will be managing excluded HSM in compliance with 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent) **or** you have stopped managing excluded HSM in compliance with the exclusion(s) and do not expect to manage any amount of excluded HSM under the exclusion(s) for at least one year. Do not include any information regarding your hazardous waste activities in this section.

1. Indicate reason for notification. Include dates where requested.

☐ Facility will begin managing excluded HSM as of _____ (mm/dd/yyyy).

☐ Facility is still managing excluded HSM/re-notifying as required by March 1 of each even-numbered year.

☐ Facility has stopped managing excluded HSM as of _____ (mm/dd/yyyy) and is notifying as required.

2. Description of excluded HSM activity. Please list the appropriate codes and quantities in **short tons** to describe your excluded HSM activity ONLY (do not include any information regarding your hazardous wastes). Use additional pages if more space is needed.

a. Facility code (answer using codes listed in the Code List section of the instructions)	b. Waste code(s) for HSM	c. Estimated short tons of excluded HSM to be managed annually	d. Actual short tons of excluded HSM that was managed during the most recent odd-numbered year	e. Land-based unit code (answer using codes listed in the Code List section of the instructions)

3. Facility has financial assurance pursuant to 40 CFR 261.4(a)(24)(vi). (Financial assurance is required for reclaimers and intermediate facilities managing excluded HSM under 40 CFR 261.4(a)(24) and (25))

Y☐ N☐ Does this facility have financial assurance pursuant to 40 CFR 261.4(a)(24)(vi)?

APPENDIX V

Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test (Method 1310B)

Note: The extraction procedure (EP), method 1310B, is published in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", environmental protection agency publication SW-846, as incorporated by reference in section 33-24-01-05.

APPENDIX VI

Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
Acetaldol	107-89-1
Acetamide	60-35-5
2-Acetylaminofluorene	53-96-3
3-Acetyl-5-hydroxypiperidine	
3-Acetylpiperidine	618-42-8
1-Acetyl-2-thiourea	591-08-2
Acrylamide	79-06-1
Acrylic acid	79-10-7
Adenine	73-24-5
Adipic acid	124-04-9
Adiponitrile	111-69-3
Alachlor	15972-60-8
Aldicarb	116-06-3
Ametryn	834-12-8
4-Aminobiphenyl	92-67-1
4-Aminopyridine	504-24-5
Aniline	62-53-3
o-Anisidine	90-04-0
Anthraquinone	84-65-1
Atrazine	1912-24-9
Benzenearsonic acid	98-05-5
Benzenesulfonic acid	98-11-3
Benzidine	92-87-5
Benzo(a)anthracene	56-55-3
Benzo(k)fluoranthene	207-08-9
Benzoic acid	65-85-0
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8
Benzyl alcohol	100-51-6
gamma-BHC	58-89-9
Bis(2-ethylhexyl)phthalate	117-81-7
Bromochloromethyl acetate	
Bromoxynil	1689-84-5
Butyric acid	107-92-6

Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
Caprolactam (hexahydro-2H-azepin-2-one)	105-60-2
Catechol (o-dihydroxybenzene)	120-80-9
Cellulose	9004-34-6
Cell wall	
Chlorhydrin (3-Chloro-1,2-propanediol)	96-24-2
Chloroacetic acid	79-11-8
2-Chloroacetophenone	93-76-5
p-Chloroaniline	106-47-8
p-Chlorobenzophenone	134-85-0
Chlorobenzilate	510-15-6
p-Chloro-m-cresol (6-chloro-m-cresol)	59-50-7
3-Chloro-2,5-diketopyrrolidine	
Chloro-1,2-ethane diol	
4-Chlorophenol	106-48-9
Chlorophenol polymers (2-chlorophenol & 4-chlorophenol)	95-57-8 & 106-48-9
1-(o-Chlorophenyl)thiourea	5344-82-1
Chrysene	218-01-9
Citric acid	77-92-9
Creosote	8001-58-9
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cresol (mixed isomers)	1319-77-3
4-Cumylphenol	27576-86
Cyanide	57-12-5
4-Cyanomethyl benzoate	
Diazinon	333-41-5
Dibenzo(a,h)anthracene	53-70-3
Dibutylphthalate	84-74-2
2,5-Dichloroaniline (N,N'-dichloroaniline)	95-82-9
2,6-Dichlorobenzonitrile11	1194-65-6
2,6-Dichloro-4-nitroaniline	99-30-9
2,5-Dichlorophenol	333-41-5
3,4-Dichlorotetrahydrofuran	
Dichlorvos (DDVP)	62-73-7

Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
Diethanolamine	111-42-2
N,N-Diethylaniline	91-66-7
Diethylene glycol	111-46-6
Diethylene glycol dimethyl ether (dimethyl Carbitol)	111-96-6
Diethylene glycol monobutyl ether (butyl Carbitol)	112-34-5
Diethylene glycol monoethyl ether acetate (Carbitol acetate)	112-15-2
Diethylene glycol monoethyl ether (Carbitol Cellosolve)	111-90-0
Diethylene glycol monomethyl ether (methyl Carbitol)	111-77-3
N,N'-Diethylhydrazine	1615-80-1
Diethyl (4-methylumbelliferyl) thionophosphate	299-45-6
Diethyl phosphorothioate	126-75-0
N,N'-Diethylpropionamide	15299-99-7
Dimethoate	60-51-5
2,3-Dimethoxystrychnidin-10-one	357-57-3
4-Dimethylaminoazobenzene	60-11-7
7,12-Dimethylbenz(a)anthracene	57-97-6
3,3-Dimethylbenzidine	119-93-7
Dimethylcarbamoyl chloride	79-44-7
Dimethyldisulfide	624-92-0
Dimethylformamide	68-12-2
1,1-Dimethylhydrazine	57-14-7
Dimethylphthalate	131-11-3
Dimethylsulfone	67-71-0
Dimethylsulfoxide	67-68-5
4,6-Dinitro-o-cresol	534-52-1
1,2-Diphenylhydrazine	122-66-7
Dipropylene glycol (1,1'-oxydi-2-propanol)	110-98-5
Endrin	72-20-8
Epinephrine	51-43-4
mono-Ethanolamine	141-43-5
Ethyl carbamate (urethane)	5-17-96
Ethylene glycol	107-21-1
Ethylene glycol monobutyl ether (butyl Cellosolve)	111-76-2
Ethylene glycol monoethyl ether (Cellosolve)	110-80-5
Ethylene glycol monoethyl ether acetate (Cellosolve acetate)	111-15-9

Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
Ethylene glycol monomethyl ether (methyl Cellosolve)	109-86-4
Ethylene glycol monophenyl ether (phenyl Cellosolve)	122-99-6
Ethylene glycol monopropyl ether (propyl Cellosolve)	2807-30-9
Ethylene thiourea (2-imidazolidinethione)	96-45-7
4-Ethylmorpholine	100-74-3
3-Ethylphenol	620-17-7
Fluoroacetic acid, sodium salt	62-74-8
Formaldehyde	50-00-0
Formamide	75-12-7
Formic acid	64-18-6
Fumaric acid	110-17-8
Glutaric acid	110-94-1
Glycerin (Glycerol)	56-81-5
Glycidol	556-52-5
Glycinamide	598-41-4
Glyphosate	1071-83-6
Guthion	86-50-0
Hexamethylene-1,6-diisocyanate (1,6-diisocyanatohexane)	822-06-0
Hexamethyl phosphoramide	680-31-9
Hexanoic acid	142-62-1
Hydrazine	302-01-2
Hydrocyanic acid	74-90-8
Hydroquinone	123-31-9
Hydroxy-2-propionitrile (hydracrylonitrile)	109-78-4
Indeno (1,2,3-cd) pyrene	193-39-5
Lead acetate	301-04-2
Lead subacetate (lead acetate, monobasic)	1335-32-6
Leucine	61-90-5
Malathion	121-75-5
Maleic acid	110-16-7
Maleic anhydride	108-31-6
Mesityl oxide	141-79-7
Methane sulfonic acid	75-75-2
Methomyl	16752-77-5
p-Methoxyphenol	150-76-5

Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
Methyl acrylate	96-33-3
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4
4,4'-Methylenediphenyl diisocyanate (diphenyl methane diisocyanate)	101-68-8
4,4'-Methylenedianiline	101-77-9
Methylene diphenylamine (MDA)	
5-Methylfurfural	620-02-0
Methylhydrazine	60-34-4
Methyliminoacetic acid	
Methyl methane sulfonate	66-27-3
1-Methyl-2-methoxyaziridine	
Methylparathion	298-00-0
Methyl sulfuric acid (sulfuric acid, dimethyl ester)	77-78-1
4-Methylthiophenol	106-45-6
Monomethylformamide (N-methylformamide)	123-39-7
Nabam	142-59-6
alpha-Naphthol	90-15-3
beta-Naphthol	135-19-3
alpha-Naphthylamine	134-32-7
beta-Naphthylamine	91-59-8
Neopentyl glycol (dimethylolpropane)	126-30-7
Niacinamide	98-92-0
o-Nitroaniline	88-74-4
Nitroglycerin	55-63-0
2-Nitrophenol	88-75-5
4-Nitrophenol	100-02-7
N-Nitrosodimethylamine	62-75-9
Nitrosoguanidine	674-81-7
N-Nitroso-n-methylurea	684-93-5
N-Nitrosomorpholine (4-nitrosomorpholine)	59-89-2
Oxalic acid	144-62-7
Parathion	56-38-2
Pentaerythritol	115-77-5
Phenacetin	62-44-2
Phenol	108-95-2
Phenylacetic acid	103-82-2

Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
m-Phenylene diamine	108-45-2
o-Phenylene diamine	95-54-5
p-Phenylene diamine	106-50-3
Phenyl mercuric acetate	62-38-4
Phorate	298-02-2
Phthalic anhydride	85-44-9
alpha-Picoline (2-methyl pyridine)	109-06-8
1,3-Propane sultone	1120-71-4
beta-Propiolactone	57-57-8
Proporur (Baygon)	
Propylene glycol	57-55-6
Pyrene	129-00-0
Pyridinium bromide	39416-48-3
Quinoline	91-22-5
Quinone (p-benzoquinone)	106-51-4
Resorcinol	108-46-3
Simazine	122-34-9
Sodium acetate	127-09-3
Sodium formate	141-53-7
Strychnine	57-24-9
Succinic acid	110-15-6
Succinimide	123-56-8
Sulfanilic acid	121-47-1
Terephthalic acid	100-21-0
Tetraethyldithiopyrophosphate	3689-24-5
Tetraethylenepentamine	112-57-2
Thiofanox	39196-18-4
Thiosemicarbazide	79-19-6
2,4-Toluenediamine	95-80-7
2,6-Toluenediamine	823-40-5
3,4-Toluenediamine	496-72-0
2,4-Toluene diisocyanate	584-84-9
p-Toluic acid	99-94-5
m-Toluidine	108-44-1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1

Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
Triethanolamine	102-71-6
Triethylene glycol dimethyl ether	
Tripropylene glycol	24800-44-0
Warfarin	81-81-2
3,4-Xylenol (3,4-dimethylphenol)	95-65-8

APPENDIX VII

List of Halogenated Organic Compounds Regulated Under Section 33-24-05-272

In determining the concentration of HOCs in a hazardous waste for purposes of the Section 33-24-05-272 land disposal prohibition, the department has defined the HOCs that must be included in the calculation as any compounds having a carbon-halogen bond which are listed in this Appendix (see Section 33-24-05-251). Appendix VII consists of the following compounds:

List of Halogenated Organic Compounds Regulated Under Section 33-24-05-272

I. Volatiles

Bromodichloromethane
Bromomethane
Carbon Tetrachloride
Clorobenzene
2-Chloro-1,3-butadiene
Chlorodibromomethane
Chloroethane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
3-Chloropropene
1,2-Dibromo-3-chloropropane
1,2-Dibromomethane
Dibromomethane
Trans-1,4-Dichloro-2--butene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
Trans-1,2-Dichloroethene
1,2-Dichloropropane
Trans-1,3-Dichloropropene
cis-1,3-Dichloropropene
Iodomethane
Methylene chloride
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Tribromomethane

II. Semivolatiles

Bis(2-chloroethoxy)ethane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
p-Chloroaniline
Chlorobenzilate
P-Chloro-m-cresol
2-Chloronaphthalene
2-Chlorphenol
3-Chloropropionitrile
m-Dichlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
3.3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloroprophene
Hexachlorpropene
4,4'-Methylenebis(2-chloroanaline)
Pentachlorobenzene
Pentachloroethane
Pentachloronitrobenzene
Pentachlorophenol
Pronamide
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol

List of Halogenated Organic Compounds Regulated Under Section 33-24-05-272

1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichlorothene
Trichloromonofluoromethane
1,2,3-Thrichloropropane
Vinyl Chloride

III. Organochlorine Pesticides

Aldrin
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC
Chlorodane
DDD
DDE
DDT
Dieldrin
Endosulfan I
Endosulfan II
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Isodrin
Kepone
Methoxyclor
Toxaphene

IV. Phenoxyacetic Acid Herbicides

2,4-Dichlorophenoxyacetic acid
Silvex
2,4,5-T

V. PCBs

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242

1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
Tris(2,3-dibromopropyl)phosphate

VI. Dioxins and Furans

Hexachlorodibenzo-p-dioxins
Hexachlorodibenzofuran
Pentachlorodibenzo-p-dioxins
Pentachlorodibenzofuran
Tetrachlorodibenzo-p-dioxins
Tetrachlorodibenzofuran
2,3,7,8-Tetrachlorodibenzo-p-dioxin

List of Halogenated Organic Compounds Regulated Under Section 33-24-05-272

Aroclor 1248

Aroclor 1254

Aroclor 1260

PCBs not otherwise specified

APPENDIX VIII

Wastes Excluded From Lab Packs Under the Alternative Treatment Standards of Subsection 3 of Section 33-24-05-282

Hazardous waste with the following hazardous waste codes may not be placed in lab packs under the alternative lab pack treatment standards of subsection 3 of section 33-24-05-282: D009, F019, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, and U151.

APPENDIX IX

[Reserved]

APPENDIX X

Recommended Technologies to Achieve Deactivation of Characteristics in Section 33-24-05-282

The treatment standard for many characteristic wastes is stated in the 33-24-05-280 Table of Treatment Standards as "Deactivation and meet UTS." The environmental protection agency has determined that many technologies, when used alone or in combination, can achieve the deactivation portion of the treatment standard. Characteristic wastes that are not managed in a facility regulated by the Clean Water Act or in a Clean Water Act-equivalent facility, and that also contain underlying hazardous constituents (see subsection 10 of section 33-24-05-251) must be treated not only by a "deactivating" technology to remove the characteristic, but also to achieve the universal treatment standards for underlying hazardous constituents. The following appendix presents a partial list of technologies, utilizing the five letter technology codes established in Table 1 of section 33-24-05-282, that may be useful in meeting the treatment standard. Use of these specific technologies is not mandatory and does not preclude direct reuse, recovery, or the use or any combination thereof, of other pretreatment technologies, provided deactivation is achieved and underlying hazardous constituents are treated to achieve the universal treatment standards.

Waste Code/Subcategory	Nonwastewaters	Wastewaters
D001 Ignitable Liquids based on 33-24-02-11.1.a.-Low TOC	RORGS.....	n.a.
Nonwastewater Subcategory (containing 1% to <10% TOC).	INCIN.....	
	WETOX.....	
	CHOXD.....	
	BIODG.....	
D001 Ignitable Liquids based on 33-24-02-11.1.a.-Ignitable	n.a.....	RORGS
Wastewater Subcategory(containing <1% TOC).		INCIN
		WETOX
		CHOXD
		BIODG
D001 Compressed Gases based on 33-24-02-11.1.c.....	RCGAS.....	n.a.
	INCIN.....	
	FSUBS.....	
	ADGAS fb. INCIN.....	
	ADGAS fb. (CHOXD; or CHRED).	
D001 Ignitable Reactives based on 33-24-02-11.1.b.....	WTRRX.....	n.a.
	CHOXD.....	
	CHRED.....	
	STABL.....	
	INCIN.....	
D001 Ignitable Oxidizers based on 33-24-02-11.1.d.....	CHRED.....	CHRED
	INCIN.....	INCIN
D002 Acid Subcategory based on 33-24-02-12.1.a. with pH	RCORR.....	NEUTR
less than or equal to 2	NEUTR.....	INCIN
	INCIN.....	
D002 Alkaline Subcategory based on 33-24-02-12.1.a. with	NEUTR.....	NEUTR
pH greater than or equal to 12.5	INCIN.....	INCIN

Waste Code/Subcategory	Nonwastewaters	Wastewaters
D002 Other Corrosives based on 33-24-02-12.1.b.....	CHOXD.....	CHOXD
	CHRED.....	CHRED
	INCIN.....	INCIN
	STABL.....	
D003 Water Reactives based on 33-24-02-13.1.b., c.,and d.....	INCIN.....	n.a.
	WTRRX	
	CHOXD.....	
	CHRED.....	
D003 Reactive Sulfides based on 33-24-02-13.1.e.....	CHOXD.....	CHOXD
	CHRED.....	CHRED
	INCIN.....	BIODG
	STABL.....	INCIN
D003 Explosives based on 33-24-02-13.1.f., g., and h.....	INCIN.....	INCIN
	CHOXD.....	CHOXD
	CHRED.....	CHRED
		BIODG
		CARBN
D003 Other Reactives based on 33-24-02-13.1.a.....	INCIN.....	INCIN
	CHOXD.....	CHOXD
	CHRED.....	CHRED
		BIODG
		CARBN
K044 Wastewater treatment sludges from the manufacturing	CHOXD.....	CHOXD
and processing of explosives.	CHRED.....	CHRED
	INCIN.....	BIODG
		CARBN
		INCIN
K045 Spent carbon from the treatment of wastewaters	CHOXD.....	CHOXD
containing explosives.	CHRED.....	CHRED
	INCIN.....	BIODG
		CARBN
		INCIN
K047 Pink/red water from TNT operations.....	CHOXD.....	CHOXD
	CHRED.....	CHRED
	INCIN.....	BIODG
		CARBN
		INCIN

Note: "n.a." stands for "not applicable;" "fb." stands for "followed by."

APPENDIX XI

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
D001[c]	All (except high total organic carbon ignitable liquids)	August 9, 1993
D001	High total organic carbon ignitable liquids	August 8, 1990
D002[c]	All	August 9, 1993
D003	Newly identified surface-disposed elemental phosphorus processing wastes	May 26, 2000
D004	Newly identified D004 and mineral processing wastes	August 24, 1998
D004	Mixed radioactive/newly identified D004 or mineral processing wastes	May 26, 2000
D005	Newly identified D005 and mineral processing wastes	August 24, 1998
D005	Mixed radioactive/newly identified D005 or mineral processing wastes	May 26, 2000
D006	Newly identified D006 and mineral processing wastes	August 24, 1998
D006	Mixed radioactive/newly identified D006 or mineral processing wastes	May 26, 2000
D007	Newly identified D007 and mineral processing wastes	August 24, 1998
D007	Mixed radioactive/newly identified D007 or mineral processing wastes	May 26, 2000
D008	Newly identified D008 and mineral processing wastes	August 24, 1998
D008	Mixed radioactive/newly identified D008 or mineral processing wastes	May 26, 2000
D009	Newly identified D009 and mineral processing wastes	August 24, 1998
D009	Mixed radioactive/newly identified D009 or mineral processing wastes	May 26, 2000
D010	Newly identified D010 and mineral processing wastes	August 24, 1998
D010	Mixed radioactive/newly identified D010 or mineral processing wastes	May 26, 2000
D011	Newly identified D011 and mineral processing wastes	August 24, 1998
D011	Mixed radioactive/newly identified D011 or mineral processing wastes	May 26, 2000
D012 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	December 14, 1994

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
D013 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	December 14, 1994
D014 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	December 14, 1994
D015 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	December 14, 1994
D016 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	December 14, 1994
D017 (that exhibit the toxicity characteristic based on the TCLP)[d]	All	December 14, 1994
D018	Mixed with radioactive wastes	September 19, 1996
D018	All others	December 19, 1994
D019	Mixed with radioactive wastes	September 19, 1996
D019	All others	December 19, 1994
D020	Mixed with radioactive wastes	September 19, 1996
D020	All others	December 19, 1994
D021	Mixed with radioactive wastes	September 19, 1996
D021	All others	December 19, 1994
D022	Mixed with radioactive wastes	September 19, 1996
D022	All others	December 19, 1994
D023	Mixed with radioactive wastes	September 19, 1996
D023	All others	December 19, 1994
D024	Mixed with radioactive wastes	September 19, 1996
D024	All others	December 19, 1994
D025	Mixed with radioactive wastes	September 19, 1996
D025	All others	December 19, 1994
D026	Mixed with radioactive wastes	September 19, 1996
D026	All others	December 19, 1994
D027	Mixed with radioactive wastes	September 19, 1996
D027	All others	December 19, 1994
D028	Mixed with radioactive wastes	September 19, 1996
D028	All others	December 19, 1994
D029	Mixed with radioactive wastes	September 19, 1996
D029	All others	December 19, 1994
D030	Mixed with radioactive wastes	September 19, 1996
D030	All others	December 19, 1994

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
D031	Mixed with radioactive wastes	September 19, 1996
D031	All others	December 19, 1994
D032	Mixed with radioactive wastes	September 19, 1996
D032	All others	December 19, 1996
D033	Mixed with radioactive wastes	September 19, 1996
D033	All others	December 19, 1994
D034	Mixed with radioactive wastes	September 19, 1996
D034	All others	December 19, 1994
D035	Mixed with radioactive wastes	September 19, 1996
D035	All others	December 19, 1994
D036	Mixed with radioactive wastes	September 19, 1996
D036	All others	December 19, 1994
D037	Mixed with radioactive wastes	September 19, 1996
D037	All others	December 19, 1994
D038	Mixed with radioactive wastes	September 19, 1996
D038	All others	December 19, 1994
D039	Mixed with radioactive wastes	September 19, 1996
D039	All others	December 19, 1994
D040	Mixed with radioactive wastes	September 19, 1996
D040	All others	December 19, 1994
D041	Mixed with radioactive wastes	September 19, 1996
D041	All others	December 19, 1994
D042	Mixed with radioactive wastes	September 19, 1996
D042	All others	December 19, 1994
D043	Mixed with radioactive wastes	September 19, 1996
D043	All others	December 19, 1994
F001	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	November 8, 1988
F001	All others	November 8, 1986
F002 (1,1,2-trichloroethane)	Wastewater and nonwastewater	August 8, 1990
F002	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	November 8, 1988
F002	All others	November 8, 1986

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
F003	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	November 8, 1988
F003	All others	November 8, 1986
F004	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	November 8, 1988
F004	All others	November 8, 1986
F005 (benzene, 2-ethoxy ethanol, 2-nitropropane)	Wastewater and nonwastewater	August 8, 1990
F005	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	November 8, 1988
F005	All others	November 8, 1986
F006	Wastewater	August 8, 1990
F006	Nonwastewater	August 8, 1988
F006 (cyanides)	Nonwastewater	July 8, 1989
F007	All	July 8, 1989
F008	All	July 8, 1989
F009	All	July 8, 1989
F010	All	June 8, 1989
F011 (cyanides)	Nonwastewater	December 8, 1989
F011	All others	July 8, 1989
F012 (cyanides)	Nonwastewater	December 8, 1989
F012	All others	July 8, 1989
F019	All	August 8, 1990
F020	All	November 8, 1988
F021	All	November 8, 1988
F025	All	August 8, 1990
F026	All	November 8, 1988
F027	All	November 8, 1988
F028	All	November 8, 1988
F032	Mixed with radioactive wastes	May 12, 1999
F032	All others	August 12, 1997
F034	Mixed with radioactive wastes	May 12, 1999

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
F034	All others	August 12, 1997
F035	Mixed with radioactive wastes	May 12, 1999
F035	All others	August 12, 1997
F037	Not generated from surface impoundment cleanouts or closures	June 30, 1993
F037	Generated from surface impoundment cleanouts or closures	June 30, 1994
F037	Mixed with radioactive wastes	June 30, 1994
F038	Not generated from surface impoundment cleanouts or closures	June 30, 1993
F038	Generated from surface impoundment cleanouts or closures	June 30, 1994
F038	Mixed with radioactive wastes	June 30, 1994
F039	Wastewater	August 8, 1990
F039	Nonwastewater	May 8, 1992
K001 (organics)[b]	All	August 8, 1988
K001	All others	August 8, 1988
K002	All	August 8, 1990
K003	All	August 8, 1990
K004	Wastewater	August 8, 1990
K004	Nonwastewater	August 8, 1988
K005	Wastewater	August 8, 1990
K005	Nonwastewater	June 8, 1989
K006	All	August 8, 1990
K007	Wastewater	August 8, 1990
K007	Nonwastewater	June 8, 1989
K008	Wastewater	August 8, 1990
K008	Nonwastewater	August 8, 1988
K009	All	June 8, 1989
K010	All	June 8, 1989
K011	Wastewater	August 8, 1990
K011	Nonwastewater	June 8, 1989
K013	Wastewater	August 8, 1990
K013	Nonwastewater	June 8, 1989
K014	Wastewater	August 8, 1990
K014	Nonwastewater	June 8, 1989

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
K015	Wastewater	August 8, 1988
K015	Nonwastewater	August 8, 1990
K016	All	August 8, 1988
K017	All	August 8, 1990
K018	All	August 8, 1988
K019	All	August 8, 1988
K020	All	August 8, 1988
K021	Wastewater	August 8, 1990
K021	Nonwastewater	August 8, 1988
K022	Wastewater	August 8, 1990
K022	Nonwastewater	August 8, 1988
K023	All	June 8, 1989
K024	All	August 8, 1988
K025	Wastewater	August 8, 1990
K025	Nonwastewater	August 8, 1988
K026	All	August 8, 1990
K027	All	June 8, 1989
K028 (metals)	Nonwastewater	August 8, 1990
K028	All others	June 8, 1989
K029	Wastewater	August 8, 1990
K029	Nonwastewater	June 8, 1989
K030	All	August 8, 1988
K031	Wastewater	August 8, 1990
K031	Nonwastewater	May 8, 1992
K032	All	August 8, 1990
K033	All	August 8, 1990
K034	All	August 8, 1990
K035	All	August 8, 1990
K036	Wastewater	June 8, 1989
K036	Nonwastewater	August 8, 1988
K037[b]	Wastewater	August 8, 1988
K037	Nonwastewater	August 8, 1988
K038	All	June 8, 1989
K039	All	June 8, 1989

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
K040	All	June 8, 1989
K041	All	August 8, 1990
K042	All	August 8, 1990
K043	all	June 8, 1989
K044	All	August 8, 1988
K045	All	August 8, 1988
K046 (nonreactive)	Nonwastewater	August 8, 1988
K046	All others	August 8, 1990
K047	All	August 8, 1988
K048	Wastewater	August 8, 1990
K048	Nonwastewater	November 8, 1990
K049	Wastewater	August 8, 1990
K049	Nonwastewater	November 8, 1990
K050	Wastewater	August 8, 1990
K050	Nonwastewater	November 8, 1990
K051	Wastewater	August 8, 1990
K051	Nonwastewater	November 8, 1990
K052	Wastewater	August 8, 1990
K052	Nonwastewater	November 8, 1990
K060	Wastewater	August 8, 1990
K060	Nonwastewater	August 8, 1988
K061	Wastewater	August 8, 1990
K061	Nonwastewater	June 30, 1992
K062	All	August 8, 1988
K069 (non-calcium sulfate)	Nonwastewater	August 8, 1988
K069	All others	August 8, 1990
K071	All	August 8, 1990
K073	All	August 8, 1990
K083	All	August 8, 1990
K084	Wastewater	August 8, 1990
K084	Nonwastewater	May 8, 1992
K085	All	August 8, 1990
K086 (organics)[b]	All	August 8, 1988
K086	All others	August 8, 1988

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
K087	All	August 8, 1988
K088	All others	October 8, 1997
K088	All others	January 8, 1997
K093	All	June 8, 1989
K094	All	June 8, 1989
K095	Wastewater	August 8, 1990
K095	Nonwastewater	June 8, 1989
K096	Wastewater	August 8, 1990
K096	Nonwastewater	June 8, 1989
K097	All	August 8, 1990
K098	All	August 8, 1990
K099	All	August 8, 1988
K100	Wastewater	August 8, 1990
K100	Nonwastewater	August 8, 1988
K101 (organics)	Wastewater	August 8, 1988
K101 (metals)	Wastewater	August 8, 1990
K101 (organics)	Nonwastewater	August 8, 1988
K101 (metals)	Nonwastewater	May 8, 1992
K102 (organics)	Wastewater	August 8, 1988
K102 (metals)	Wastewater	August 8, 1990
K102 (organics)	Nonwastewater	August 8, 1988
K102 (metals)	Nonwastewater	May 8, 1992
K103	All	August 8, 1988
K104	All	August 8, 1988
K105	All	August 8, 1990
K106	Wastewater	August 8, 1990
K106	Nonwastewater	May 8, 1992
K107	Mixed with radioactive wastes	June 30, 1994
K107	All others	November 9, 1992
K108	Mixed with radioactive wastes	June 30, 1994
K108	All others	November 9, 1992
K109	Mixed with radioactive wastes	June 30, 1994
K109	All others	November 9, 1992
K110	Mixed with radioactive wastes	June 30, 1994

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
K110	All others	November 9, 1992
K111	Mixed with radioactive wastes	June 30, 1994
K111	All others	November 9, 1992
K112	Mixed with radioactive wastes	June 30, 1994
K112	All others	November 9, 1992
K113	All	June 8, 1989
K114	All	June 8, 1989
K115	All	June 8, 1989
K116	All	June 8 , 1989
K117	Mixed with radioactive wastes	June 30, 1994
K117	All others	November 9, 1992
K118	Mixed with radioactive wastes	June 30, 1994
K118	All others	November 9, 1992
K123	Mixed with radioactive wastes	June 30, 1994
K123	All others	November 9, 1992
K124	Mixed with radioactive wastes	June 30, 1994
K124	All others	November 9, 1992
K125	Mixed with radioactive wastes	June 30, 1994
K125	All others	November 9, 1992
K126	Mixed with radioactive wastes	June 30, 1994
K126	All others	November 9, 1992
K131	Mixed with radioactive wastes	June 30, 1994
K131	All others	November 9, 1992
K132	Mixed with radioactive wastes	June 30, 1994
K132	All others	November 9, 1992
K136	Mixed with radioactive wastes	June 30, 1994
K136	All others	November 9, 1992
K141	Mixed with radioactive wastes	September 19, 1996
K141	All others	December 19, 1994
K142	Mixed with radioactive wastes	September 19, 1996
K142	All others	December 19, 1994
K143	Mixed with radioactive wastes	September 19, 1996
K143	All others	December 19, 1994
K144	Mixed with radioactive wastes	September 19, 1996

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
K144	All others	December 19, 1994
K145	Mixed with radioactive wastes	September 19, 1996
K145	All others	December 19, 1994
K147	Mixed with radioactive wastes	September 19, 1996
K147	All others	December 19, 1994
K148	Mixed with radioactive wastes	September 19, 1996
K148	All others	December 19, 1994
K149	Mixed with radioactive wastes	September 19, 1996
K149	All others	December 19, 1994
K150	Mixed with radioactive wastes	September 19, 1996
K150	All others	December 19, 1994
K151	Mixed with radioactive wastes	September 19, 1996
K151	All others	December 19, 1994
K156	Mixed with radioactive wastes	April 8, 1998
K156	All others	July 8, 1996
K157	Mixed with radioactive wastes	April 8, 1998
K157	All others	July 8, 1996
K158	Mixed with radioactive wastes	April 8, 1998
K158	All others	July 8, 1996
K159	Mixed with radioactive wastes	April 8, 1998
K159	All others	July 8, 1996
K160	Mixed with radioactive wastes	April 8, 1998
K160	All others	July 8, 1996
K161	Mixed with radioactive wastes	April 8, 1998
K161	All others	July 8, 1996
P001	All	August 8, 1990
P002	All	August 8, 1990
P003	All	August 8, 1990
P004	All	August 8, 1990
P005	All	August 8, 1990
P006	All	August 8, 1990
P007	All	August 8, 1990
P008	All	August 8, 1990
P009	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
P010	Wastewater	August 8, 1990
P010	Nonwastewater	May 8, 1992
P011	Wastewater	August 8, 1990
P011	Nonwastewater	May 8, 1992
P012	Wastewater	August 8, 1990
P012	Nonwastewater	May 8, 1992
P013 (barium)	Nonwastewater	August 8, 1990
P013	All others	June 8, 1989
P014	All	August 8, 1990
P015	All	August 8, 1990
P016	All	August 8, 1990
P017	All	August 8, 1990
P018	All	August 8, 1990
P020	All	August 8, 1990
P021	All	June 8, 1989
P022	All	August 8, 1990
P023	All	August 8, 1990
P024	All	August 8, 1990
P026	All	August 8, 1990
P027	All	August 8, 1990
P028	All	August 8, 1990
P029	All	June 8, 1989
P030	All	June 8, 1989
P031	All	August 8, 1990
P033	All	August 8, 1990
P034	All	August 8, 1990
P036	Wastewater	August 8, 1990
P036	Nonwastewater	May 8, 1992
P037	All	August 8, 1990
P038	Wastewater	August 8, 1990
P038	Nonwastewater	May 8, 1992
P039	All	June 8, 1989
P040	All	June 8, 1989
P041	All	June 8, 1989

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
P042	All	August 8, 1990
P043	All	June 8, 1989
P044	All	June 8, 1989
P045	All	August 8, 1990
P046	All	August 8, 1990
P047	All	August 8, 1990
P048	All	August 8, 1990
P049	All	August 8, 1990
P050	All	August 8, 1990
P051	All	August 8, 1990
P054	All	August 8, 1990
P056	All	August 8, 1990
P057	All	August 8, 1990
P058	All	August 8, 1990
P059	All	August 8, 1990
P060	All	August 8, 1990
P062	All	June 8, 1989
P063	All	June 8, 1989
P064	All	August 8, 1990
P065	Wastewater	August 8, 1990
P065	Nonwastewater	May 8, 1992
P066	All	August 8, 1990
P067	All	August 8, 1990
P068	All	August 8, 1990
P069	All	August 8, 1990
P070	All	August 8, 1990
P071	All	June 8, 1989
P072	All	August 8, 1990
P073	All	August 8, 1990
P074	All	June 8, 1989
P075	All	August 8, 1990
P076	All	August 8, 1990
P077	All	August 8, 1990
P078	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
P081	All	August 8, 1990
P082	All	August 8, 1990
P084	All	August 8, 1990
P085	All	June 8, 1989
P087	All	May 8, 1992
P088	All	August 8, 1990
P089	All	June 8, 1989
P092	Wastewater	August 8, 1990
P092	Nonwastewater	May 8, 1992
P093	All	August 8, 1990
P094	All	June 8, 1989
P095	All	August 8, 1990
P096	All	August 8, 1990
P097	All	June 8, 1989
P098	All	June 8, 1989
P099 (silver)	Wastewater	August 8, 1990
P099	All others	June 8, 1989
P101	All	August 8, 1990
P102	All	August 8, 1990
P103	All	August 8, 1990
P104 (silver)	Wastewater	August 8, 1990
P104	All others	June 8, 1989
P105	All	August 8, 1990
P106	All	June 8, 1989
P108	All	August 8, 1990
P109	All	June 8, 1989
P110	All	August 8, 1990
P111	All	June 8, 1989
P112	All	August 8, 1990
P113	All	August 8, 1990
P114	All	August 8, 1990
P115	All	August 8, 1990
P116	All	August 8, 1990
P118	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
P119	All	August 8, 1990
P120	All	August 8, 1990
P121	All	June 8, 1989
P122	All	August 8, 1990
P123	All	August 8, 1990
P127	Mixed with radioactive wastes	April 8, 1998
P127	All others	July 8, 1996
P128	Mixed with radioactive wastes	April 8, 1998
P128	All others	July 8, 1996
P185	Mixed with radioactive wastes	April 8, 1998
P185	All others	July 8, 1996
P188	Mixed with radioactive wastes	April 8, 1998
P188	All others	July 8, 1996
P189	Mixed with radioactive wastes	April 8, 1998
P189	All others	July 8, 1996
P190	Mixed with radioactive wastes	April 8, 1998
P190	All others	July 8, 1996
P191	Mixed with radioactive wastes	April 8, 1998
P191	All others	July 8, 1996
P192	Mixed with radioactive wastes	April 8, 1998
P192	All others	July 8, 1996
P194	Mixed with radioactive wastes	April 8, 1998
P194	All others	July 8, 1996
P196	Mixed with radioactive wastes	April 8, 1998
P196	All others	July 8, 1996
P197	Mixed with radioactive wastes	April 8, 1998
P197	All others	July 8, 1996
P198	Mixed with radioactive wastes	April 8, 1998
P198	All others	July 8, 1996
P199	Mixed with radioactive wastes	April 8, 1998
P199	All others	July 8, 1996
P201	Mixed with radioactive wastes	April 8, 1998
P201	All others	July 8, 1996
P202	Mixed with radioactive wastes	April 8, 1998

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
P202	All others	July 8, 1996
P203	Mixed with radioactive wastes	April 8, 1998
P203	All others	July 8, 1996
P204	Mixed with radioactive wastes	April 8, 1998
P204	All others	July 8, 1996
P205	Mixed with radioactive wastes	April 8, 1998
P205	All others	July 8, 1996
U001	All	August 8, 1990
U002	All	August 8, 1990
U003	All	August 8, 1990
U004	All	August 8, 1990
U005	All	August 8, 1990
U006	All	August 8, 1990
U007	All	August 8, 1990
U008	All	August 8, 1990
U009	All	August 8, 1990
U010	All	August 8, 1990
U011	All	August 8, 1990
U012	All	August 8, 1990
U014	All	August 8, 1990
U015	All	August 8, 1990
U016	All	August 8, 1990
U017	All	August 8, 1990
U018	All	August 8, 1990
U019	All	August 8, 1990
U020	All	August 8, 1990
U021	All	August 8, 1990
U022	All	August 8, 1990
U023	All	August 8, 1990
U024	All	August 8, 1990
U025	All	August 8, 1990
U026	All	August 8, 1990
U027	All	August 8, 1990
U028	All	June 8, 1989

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U029	All	August 8, 1990
U030	All	August 8, 1990
U031	All	August 8, 1990
U032	All	August 8, 1990
U033	All	August 8, 1990
U034	All	August 8, 1990
U035	All	August 8, 1990
U036	All	August 8, 1990
U037	All	August 8, 1990
U038	All	August 8, 1990
U039	All	August 8, 1990
U041	All	August 8, 1990
U042	All	August 8, 1990
U043	All	August 8, 1990
U044	All	August 8, 1990
U045	All	August 8, 1990
U046	All	August 8, 1990
U047	All	August 8, 1990
U048	All	August 8, 1990
U049	All	August 8, 1990
U050	All	August 8, 1990
U051	All	August 8, 1990
U052	All	August 8, 1990
U053	All	August 8, 1990
U055	All	August 8, 1990
U056	All	August 8, 1990
U057	All	August 8, 1990
U058	All	June 8, 1989
U059	All	August 8, 1990
U060	All	August 8, 1990
U061	All	August 8, 1990
U062	All	August 8, 1990
U063	All	August 8, 1990
U064	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U066	All	August 8, 1990
U067	All	August 8, 1990
U068	All	August 8, 1990
U069	All	June 30, 1992
U070	All	August 8, 1990
U071	All	August 8, 1990
U072	All	August 8, 1990
U073	All	August 8, 1990
U074	All	August 8, 1990
U075	All	August 8, 1990
U076	All	August 8, 1990
U077	All	August 8, 1990
U078	All	August 8, 1990
U079	All	August 8, 1990
U080	All	August 8, 1990
U081	All	August 8, 1990
U082	All	August 8, 1990
U083	All	August 8, 1990
U084	All	August 8, 1990
U085	All	August 8, 1990
U086	All	August 8, 1990
U087	All	June 8, 1989
U088	All	June 8, 1989
U089	All	August 8, 1990
U090	All	August 8, 1990
U091	All	August 8, 1990
U092	All	August 8, 1990
U093	All	August 8, 1990
U094	All	August 8, 1990
U095	All	August 8, 1990
U096	All	August 8, 1990
U097	All	August 8, 1990
U098	All	August 8, 1990
U099	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U101	All	August 8, 1990
U102	All	June 8, 1989
U103	All	August 8, 1990
U105	All	August 8, 1990
U106	All	August 8, 1990
U107	All	June 8, 1989
U108	All	August 8, 1990
U109	All	August 8, 1990
U110	All	August 8, 1990
U111	All	August 8, 1990
U112	All	August 8, 1990
U113	All	August 8, 1990
U114	All	August 8, 1990
U115	All	August 8, 1990
U116	All	August 8, 1990
U117	All	August 8, 1990
U118	All	August 8, 1990
U119	All	August 8, 1990
U120	All	August 8, 1990
U121	All	August 8, 1990
U122	All	August 8, 1990
U123	All	August 8, 1990
U124	All	August 8, 1990
U125	All	August 8, 1990
U126	All	August 8, 1990
U127	All	August 8, 1990
U128	All	August 8, 1990
U129	All	August 8, 1990
U130	All	August 8, 1990
U131	All	August 8, 1990
U132	All	August 8, 1990
U133	All	August 8, 1990
U134	All	August 8, 1990
U135	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U136	Wastewater	August 8, 1990
U136	Nonwastewater	May 8, 1992
U137	All	August 8, 1990
U138	All	August 8, 1990
U140	All	August 8, 1990
U141	All	August 8, 1990
U142	All	August 8, 1990
U143	All	August 8, 1990
U144	All	August 8, 1990
U145	All	August 8, 1990
U146	All	August 8, 1990
U147	All	August 8, 1990
U148	All	August 8, 1990
U149	All	August 8, 1990
U150	All	August 8, 1990
U151	Wastewater	August 8, 1990
U151	Nonwastewater	May 8, 1992
U152	All	August 8, 1990
U153	All	August 8, 1990
U154	All	August 8, 1990
U155	All	August 8, 1990
U156	All	August 8, 1990
U157	All	August 8, 1990
U158	All	August 8, 1990
U159	All	August 8, 1990
U160	All	August 8, 1990
U161	All	August 8, 1990
U162	All	August 8, 1990
U163	All	August 8, 1990
U164	All	August 8, 1990
U165	All	August 8, 1990
U166	All	August 8, 1990
U167	All	August 8, 1990
U168	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U169	All	August 8, 1990
U170	All	August 8, 1990
U171	All	August 8, 1990
U172	All	August 8, 1990
U173	All	August 8, 1990
U174	All	August 8, 1990
U176	All	August 8, 1990
U177	All	August 8, 1990
U178	All	August 8, 1990
U179	All	August 8, 1990
U180	All	August 8, 1990
U181	All	August 8, 1990
U182	All	August 8, 1990
U183	All	August 8, 1990
U184	All	August 8, 1990
U185	All	August 8, 1990
U186	All	August 8, 1990
U187	All	August 8, 1990
U188	All	August 8, 1990
U189	All	August 8, 1990
U190	All	June 8, 1989
U191	All	August 8, 1990
U192	All	August 8, 1990
U193	All	August 8, 1990
U194	All	June 8, 1989
U196	All	August 8, 1990
U197	All	August 8, 1990
U200	All	August 8, 1990
U201	All	August 8, 1990
U203	All	August 8, 1990
U204	All	August 8, 1990
U205	All	August 8, 1990
U206	All	August 8, 1990
U207	All	August 8, 1990

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U208	All	August 8, 1990
U209	All	August 8, 1990
U210	All	August 8, 1990
U211	All	August 8, 1990
U213	All	August 8, 1990
U214	All	August 8, 1990
U215	All	August 8, 1990
U216	All	August 8, 1990
U217	All	August 8, 1990
U218	All	August 8, 1990
U219	All	August 8, 1990
U220	All	August 8, 1990
U221	All	June 8, 1989
U222	All	August 8, 1990
U223	All	June 8, 1989
U225	All	August 8, 1990
U226	All	August 8, 1990
U227	All	August 8, 1990
U228	All	August 8, 1990
U234	All	August 8, 1990
U235	All	June 8, 1989
U236	All	August 8, 1990
U237	All	August 8, 1990
U238	All	August 8, 1990
U239	All	August 8, 1990
U240	All	August 8, 1990
U243	All	August 8, 1990
U244	All	August 8, 1990
U246	All	August 8, 1990
U247	All	August 8, 1990
U248	All	August 8, 1990
U249	All	August 8, 1990
U271	Mixed with radioactive wastes	April 8, 1998
U271	All others	July 8, 1996

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U277	Mixed with radioactive wastes	April 8, 1998
U277	All others	July 8, 1996
U278	Mixed with radioactive wastes	April. 8, 1998
U278	All others	July 8, 1996
U279	Mixed with radioactive wastes	April 8, 1998
U279	All others	July 8, 1996
U280	Mixed with radioactive wastes	April 8, 1998
U280	All others	July 8, 1996
U328	Mixed with radioactive wastes	June 30, 1994
U328	All others	November 9, 1992
U353	Mixed with radioactive wastes	June 30, 1994
U353	All others	November 9, 1992
U359	Mixed with radioactive wastes	June 30, 1994
U359	All others	November 9, 1992
U364	Mixed with radioactive wastes	April 8, 1998
U364	All others	July 8, 1996
U365	Mixed with radioactive wastes	April 8, 1998
U365	All others	July 8, 1996
U366	Mixed with radioactive wastes	April 8, 1998
U366	All others	July 8, 1996
U367	Mixed with radioactive wastes	April 8, 1998
U367	All others	July 8, 1996
U372	Mixed with radioactive wastes	April 8, 1998
U372	All others	July 8, 1996
U373	Mixed with radioactive wastes	April 8, 1998
U373	All others	July 8, 1996
U375	Mixed with radioactive wastes	April 8, 1998
U375	All others	July 8, 1996
U376	Mixed with radioactive wastes	April 8, 1998
U376	All others	July 8, 1996
U377	Mixed with radioactive wastes	April 8, 1998
U377	All others	July 8, 1996
U378	Mixed with radioactive wastes	April 8, 1998
U378	All others	July 8, 1996

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U379	Mixed with radioactive wastes	April 8, 1998
U379	All others	July 8, 1996
U381	Mixed with radioactive wastes	April 8, 1998
U381	All others	July 8, 1996
U382	Mixed with radioactive wastes	April 8, 1998
U382	All others	July 8, 1996
U383	Mixed with radioactive wastes	April 8, 1998
U383	All others	July 8, 1996
U384	Mixed with radioactive wastes	April 8, 1998
U384	All others	July 8, 1996
U385	Mixed with radioactive wastes	April 8, 1998
U385	All others	July 8, 1996
U386	Mixed with radioactive wastes	April 8, 1998
U386	All others	July 8, 1996
U387	Mixed with radioactive wastes	April 8, 1998
U387	All others	July 8, 1996
U389	Mixed with radioactive wastes	April 8, 1998
U389	All others	July 8, 1996
U390	Mixed with radioactive wastes	April 8, 1998
U390	All others	July 8, 1996
U391	Mixed with radioactive wastes	April 8, 1998
U391	All others	July 8, 1996
U392	Mixed with radioactive wastes	April 8, 1998
U392	All others	July 8, 1996
U393	Mixed with radioactive wastes	April 8, 1998
U393	All others	July 8, 1996
U394	Mixed with radioactive wastes	April 8, 1998
U394	All others	July 8, 1996
U395	Mixed with radioactive wastes	April 8, 1998
U395	All others	July 8, 1996
U396	Mixed with radioactive wastes	April 8, 1998
U396	All others	July 8, 1996
U400	Mixed with radioactive wastes	April 8, 1998
U400	All others	July 8, 1996

Land Disposal Restrictions Effective Dates of Surface Disposed Prohibited Hazardous Wastes

Table 1. Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the Land Disposal Restrictions[a] - Comprehensive List

Waste Code	Waste Category	Effective Date
U401	Mixed with radioactive wastes	April 8, 1998
U401	All others	July 8, 1996
U402	Mixed with radioactive wastes	April 8, 1998
U402	All others	July 8, 1996
U403	Mixed with radioactive wastes	April 8, 1998
U403	All others	July 8, 1996
U404	Mixed with radioactive wastes	April 8, 1998
U404	All others	July 8, 1996
U407	Mixed with radioactive wastes	April 8, 1998
U407	All others	July 8, 1996
U409	Mixed with radioactive wastes	April 8, 1998
U409	All others	July 8, 1996
U410	Mixed with radioactive wastes	April 8, 1998
U410	All others	July 8, 1996
U411	Mixed with radioactive wastes	April 8, 1998
U411	All others	July 8, 1996

[a]This table does not include mixed radioactive wastes (from the First, Second, and Third Third rules) which received national capacity variance until May 8, 1992. This table also does not include contaminated soil and debris wastes.

[b]The standard was revised in the Third Third Final Rule (55 FR 22520, June 1, 1990).

[c]The standard was revised in the Third Third Emergency Rule (58 FR 29860, May 24, 1993); the original effective date was August 8, 1990.

[d]The standard was revised in the Phase II Final Rule (59 FR 47982, September 19, 1994); the original effective date was August 8, 1990.

[e]The standards for selected reactive wastes was revised in the Phase III Final Rule (61 FR 15566, April 8, 1996); the original effective date was August 8, 1990.

Table 2. Summary of Effective Dates of Land Disposal Restrictions for Contaminated Soil and Debris

Restricted Hazardous Waste in Contaminated Soil and Debris	Effective Date
1. Solvent-(F001 through F005) and dioxin-(F020 through F023 and F026 through F028) containing soil and debris from CERCLA response or RCRA corrective actions.	November 8, 1990
2. Soil and debris not from CERCLA response or RCRA corrective actions contaminated with less than 1% total solvents (F001 through F005) or dioxins (F020 through F023 and F026 through F028).	November 8, 1988
3. All soil and debris contaminated with First Third wastes for which treatment standards are based on incineration.	August 8, 1990
4. All soil and debris contaminated with Second Third wastes for which treatment standards are based on incineration.	June 8, 1991
5. All soil and debris contaminated with Third Third wastes or, First or Second Third "soft hammer" wastes which had treatment standards promulgated in the Third Third rule, for which treatment standards are based on incineration, vitrification, or mercury retorting, acid leaching followed by chemical precipitation, or thermal recovery of metals; as well as all inorganic solids debris contaminated with D004 through D011 wastes, and all soil and debris contaminated with mixed Resource Conservation and Recovery Act/radioactive wastes.	May 8, 1992
6. Soil and debris contaminated with D012 through D043, K141 through K145, and K147 through K151 wastes.	December 19, 1994
7. Debris (only) contaminated with F037, F038, K107 through K112, K117, K118, K123 through K126, K131, K132, K136, U328, U353, U359.	December 19, 1994
8. Soil and debris conatminated with K156 through K161, P127, P128, P188 through P192, P194, P196 through P199, P201 through P205, U271, U277 through U280, U364 through U367, U372, U373, U375 through U379, U381 through U387, U389 through U396, U400 through U404, U407, and U409 through U411 wastes.	July 8, 1996
9. Soil and debris contaminated with K088 wastes.	October 8, 1997
10. Soil and debris contaminated with radioactive wastes mixed with K088, K156 through K161, P127, P128, P188 through P192, P194, P196 through P199, P201 through P205, U271, U277 through U280, U364 through U367, U372, U373, U375 through U379, U381 through U387, U389 through U396, U400 through U404, U407, and U409 through U411 wastes.	April 8, 1998
11. Soil and debris contaminated with F032, F034, and F035.	May 12, 1997
12. Soil and debris contaminated with newly identified D004 through D011 toxicity characteristic wastes and mineral processing wastes.	August 24, 1998
13. Soil and debris contaminated with mixed radioactive newly identified D004 through D011 characteristic wastes and mineral processing wastes.	May 26, 2000

Note: Appendix XI is provided for the convenience of the reader.

APPENDIX XII.

Ground Water Monitoring List

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene.....	83-32-9	Acenaphthylene, 1,2-dihydro-
Acenaphthylene.....	208-96-8	Acenaphthylene
Acetone.....	67-64-1	2-Propanone
Acetophenone.....	98-86-2	Ethanone, 1-phenyl-
Acetonitrile; Methyl cyanide.....	75-05-8	Acetonitrile
2-Acetylaminofluorene; 2-AAF.....	53-96-3	Acetamide, N-9H-fluoren-2-yl-
Acrolein.....	107-02-8	2-Propenal
Acrylonitrile.....	107-13-1	2-Propenenitrile
Aldrin.....	309-00-2	1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-,1,1,4,4a,5,8,8a-hexahydro- (1α,4 α,4αβ,5α,8α,8aβ)-
Allyl chloride.....	107-05-1	1-Propene, 3-chloro-
4-Aminobiphenyl.....	92-67-1	[1,1'-Biphenyl]-4-amine
Aniline.....	62-53-3	Benzenamine
Anthracene.....	120-12-7	Anthracene
Antimony.....	(Total)	Antimony
Aramite.....	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester
Arsenic.....	(Total)	Arsenic
Barium.....	(Total)	Barium
Benzene.....	71-43-2	Benzene
Benzo[a]anthracene; Benzanthracene.....	56-55-3	Benz[a]anthracene
Benzo[b]fluoranthene.....	205-99-2	Benz[e]acephenanthrylene
Benzo[k]fluoranthene.....	207-08-9	Benzo[k]fluoranthene
Benzo[ghi]perylene.....	191-24-2	Benzo[ghi]perylene
Benzo[a]pyrene.....	50-32-8	Benzo[a]pyrene
Benzyl alcohol.....	100-51-6	Benzenemethanol
Beryllium.....	(Total)	Beryllium
alpha-BHC.....	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3β,4α,5β,6β)-
beta-BHC.....	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2β,3α,4β,5α,6β)-
delta-BHC.....	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3α,4β,5α,6β)-
gamma-BHC; Lindane.....	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3β,4α,5α,6β)-
Bis(2-chloroethoxy)methane.....	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
Bis(2-chloroethyl)ether.....	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
Bis(2-chloro-1-methylethyl) ether; 2,2'-Dichlorodiisopropyl ether.....	108-60-1	Propane, 2,2'-oxybis[1-chloro-
Bis(2-ethylhexyl)phthalate.....	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester
Bromodichloromethane.....	75-27-4	Methane, bromodichloro-
Bromoform; Tribromomethane.....	75-25-2	Methane, tribromo-

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester
Cadmium	(Total)	Cadmium
Carbon disulfide	75-15-0	Carbon disulfide
Carbon tetrachloride	56-23-5	Methane, tetrachloro-
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-
Chlorobenzene	108-90-7	Benzene, chloro-
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-α-(4-chlorophenyl)-α-hydroxy, ethyl ester
p-Chloro-m-cresol	59-50-7	Phenol, 4-chloro-3-methyl-
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-
Chloroform	67-66-3	Methane, trichloro-
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-
2-Chlorophenol	95-57-8	Phenol, 2-chloro-
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-
Chromium	(Total)	Chromium
Chrysene	218-01-9	Chrysene
Cobalt	(Total)	Cobalt
Copper	(Total)	Copper
m-Cresol	108-39-4	Phenol, 3-methyl-
o-Cresol	95-48-7	Phenol, 2-methyl-
p-Cresol	106-44-5	Phenol, 4-methyl-
Cyanide	57-12-5	Cyanide
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-
4,4'-DDD	72-54-8	Benzene 1,1'-(2,2-dichloroethylidene)bis[4-chloro-
4,4'-DDE	72-55-9	Benzene 1,1'-(dichloroethylidene)bis[4-chloro-
4,4'-DDT	50-29-3	Benzene 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S- (2,3-dichloro-2-propenyl) ester
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene
Dibenzofuran	132-64-9	Dibenzofuran
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-
1,2-Dibromoethane; Ethylene dibromide	106-93-4	Ethane, 1,2-dibromo-

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene.....	83-32-9	Acenaphthylene, 1,2-dihydro-
Di-n-butyl phthalate.....	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
o-Dichlorobenzene.....	95-50-1	Benzene, 1,2-dichloro-
m-Dichlorobenzene.....	541-73-1	Benzene, 1,3-dichloro-
p-Dichlorobenzene.....	106-46-7	Benzene, 1,4-dichloro-
3,3'-Dichlorobenzidine.....	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
trans-1,4-Dichloro-2-butene.....	110-57-6	2-Butene, 1,4-dichloro-, (E)-
Dichlorodifluoromethane.....	75-71-8	Methane, dichlorodifluoro-
1,1-Dichloroethane.....	75-34-3	Ethane, 1,1-dichloro-
1,2-Dichloroethane; Ethylene dichloride.....	107-06-2	Ethane, 1,2-dichloro-
1,1-Dichloroethylene; Vinylidene chloride.....	75-35-4	Ethene, 1,1-dichloro-
trans-1,2-Dichloroethylene.....	156-60-5	Ethene, 1,2-dichloro-, (E)-
2,4-Dichlorophenol.....	120-83-2	Phenol, 2,4-dichloro-
2,6-Dichlorophenol.....	87-65-0	Phenol, 2,6-dichloro-
1,2-Dichloropropane.....	78-87-5	Propane, 1,2-dichloro-
cis-1,3-Dichloropropene.....	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-
trans-1,3-Dichloropropene.....	10061-02-6	1-Propene, 1,3-dichloro-, (E)-
Dieldrin.....	60-57-1	2,7:3,6-Dimethanonaphth[2,3-]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,(1aα,2β,2aα,3β,6β,6aα,7β,7aα)-
Diethyl phthalate.....	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin.....	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
Dimethoate.....	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
p-(Dimethylamino)azobenzene.....	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
7,12-Dimethylbenz[a]anthracene.....	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
3,3'-Dimethylbenzidine.....	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
alpha,alpha-Dimethylphenethylamine.....	122-09-8	Benzeneethanamine, α,α-dimethyl-
2,4-Dimethylphenol.....	105-67-9	Phenol, 2,4-dimethyl-
Dimethyl phthalate.....	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
m-Dinitrobenzene.....	99-65-0	Benzene, 1,3-dinitro-
4,6-Dinitro-o-cresol.....	534-52-1	Phenol, 2-methyl-4,6-dinitro-
2,4-Dinitrophenol.....	51-28-5	Phenol, 2,4-dinitro-
2,4-Dinitrotoluene.....	121-14-2	Benzene, 1-methyl-2,4-dinitro-
2,6-Dinitrotoluene.....	606-20-2	Benzene, 2-methyl-1,3-dinitro-
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol.....	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
Di-n-octyl phthalate.....	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
1,4-Dioxane.....	123-91-1	1,4-Dioxane

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-
Diphenylamine	122-39-4	Benzenamine, N-phenyl-
Disulfoton	298-04-4	Phosphorodi thioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide,(3α,5aβ,6α,9α,9aβ)-
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide,(3α,5aα,6β,9β,9aα)-
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide
Endrin	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,(1aα,2β,2aβ,3α,6α,6aβ,7β,7aα)-
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxalde-hyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1α,2β,2aβ,4β,4aβ,5β,6aβ,6bβ,7R*)-
Ethylbenzene	100-41-4	Benzene, ethyl-
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester
Famphur	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl]-O,O-dimethyl ester
Fluoranthene	206-44-0	Fluoranthene
Fluorene	86-73-7	9H-Fluorene
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-tachloro-1a,1b,5,5a,6,6a,-hexahydro-,(1aα,1bβ,2α,5α,5aβ,6β,6aα)
Hexachlorobenzene	118-74-1	Benzene, hexachloro-
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
Hexachlorocyclopentadiene	77-47-4	1,3 Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
Hexachloroethane	67-72-1	Ethane, hexachloro-
Hexachlorophene	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
2-Hexanone	591-76-6	2-Hexanone
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno[1,2,3-cd]pyrene
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1α,4α,4aβ,5β,8β,8aβ)-
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta-[cd]pentalen-2-one,1,1a,3,3a,4,5,5,5a,5b,6-decachloroctahydro-
Lead	(Total)	Lead
Mercury	(Total)	Mercury
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-
Methapyrilene	91-80-5	1,2,Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2,trichloroethylidene)bis[4- methoxy-

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene.....	83-32-9	Acenaphthylene, 1,2-dihydro-
Methyl bromide; Bromomethane.....	74-83-9	Methane, bromo-
Methyl chloride; Chloromethane.....	74-87-3	Methane, chloro-
3-Methylcholanthrene.....	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-
Methyl ethyl ketone, MEK.....	78-93-3	2-Butanone
Methyl iodide; Iodomethane.....	74-88-4	Methane, iodo-
Methyl methacrylate.....	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester
Methyl methanesulfonate.....	66-27-3	Methanesulfonic acid, methyl ester
2-Methylnaphthalene.....	91-57-6	Naphthalene, 2-methyl-
Methyl parathion; Parathion methyl..	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl)ester
4-Methyl-2-pentanone; Methyl isobutyl ketone.....	108-10-1	2-Pentanone, 4-methyl-
Naphthalene.....	91-20-3	Naphthalene
1,4-Naphthoquinone.....	130-15-4	1,4-Naphthalenedione
1-Naphthylamine.....	134-32-7	1-Naphthalenamine
2-Naphthylamine.....	91-59-8	2-Naphthalenamine
Nickel.....	(Total)	Nickel
o-Nitroaniline.....	88-74-4	Benzenamine, 2-nitro-
m-Nitroaniline.....	99-09-2	Benzenamine, 3-nitro-
p-Nitroaniline.....	100-01-6	Benzenamine, 4-nitro-
Nitrobenzene.....	98-95-3	Benzene, nitro-
o-Nitrophenol.....	88-75-5	Phenol, 2-nitro-
p-Nitrophenol.....	100-02-7	Phenol, 4-nitro-
4-Nitroquinoline 1-oxide.....	56-57-5	Quinoline, 4-nitro, 1-oxide
N-Nitrosodi-n-butylamine.....	924-16-3	1-Butanamine, N-butyl-N-nitroso-
N-Nitrosodiethylamine.....	55-18-5	Ethanamine, N-ethyl-N-nitroso-
N-Nitrosodimethylamine.....	62-75-9	Methanamine, N-methyl-N-nitroso-
N-Nitrosodiphenylamine.....	86-30-6	Benzenamine, N-nitroso-N-phenyl
N-Nitrosodipropylamine; Di-n-propylnitrosamine.....	621-64-7	1-Propanamine, N-nitroso-N-propyl-
N-Nitrosomethylethylamine.....	10595-95-6	Ethanamine, N-methyl-N-nitroso-
N-Nitrosomorpholine.....	59-89-2	Morpholine, 4-nitroso-
N-Nitrosopiperidine.....	100-75-4	Piperidine, 1-nitroso-
N-Nitrosopyrrolidine.....	930-55-2	Pyrrolidine, 1-nitroso-
5-Nitro-o-toluidine.....	99-55-8	Benzenamine, 2-methyl-5-nitro-
Parathion.....	56-38-2	Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl)ester
Polychlorinated biphenyls; PCBs.....	See Note 4	1,1'-Biphenyl, chloro derivatives
Polychlorinated dibenzo-p-dioxins; PCDDs.....	See Note 5	Dibenzo[b,e][1,4]dioxin, chloro derivatives
Polychlorinated dibenzofurans;	See Note 6	Dibenzofuran, chloro derivatives

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-
PCDFs		
Pentachlorobenzene	608-93-5	Benzene, pentachloro-
Pentachloroethane	76-01-7	Ethane, pentachloro-
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-
Pentachlorophenol	87-86-5	Phenol, pentachloro-
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)
Phenanthrene	85-01-8	Phenanthrene
Phenol	108-95-2	Phenol
p-Phenylenediamine	106-50-3	1,4-Benzenediamine
Phorate	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl]ester
2-Picoline	109-06-8	Pyridine, 2-methyl-
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile
Pyrene	129-00-0	Pyrene
Pyridine	110-86-1	Pyridine
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
Selenium	(Total)	Selenium
Silver	(Total)	Silver
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
Styrene	100-42-5	Benzene, ethenyl-
Sulfide	18496-25-8	Sulfide
2,4,5-T; 2,4,5-Trichlorophenoxy-acetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
2,3,7,8-TCDD; 2,3,7,8-Tetrachloro-dibenzo-p-dioxin	1746-01-6	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-
Tetrachloroethylene; Perchloro-ethylene; Tetrachloroethene	127-18-4	Ethene, tetrachloro-
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-
Tetraethyl dithiopyrophosphate; Sulfotepp	3689-24-5	Thiodiphosphoric acid ($[(HO)_2 P(S)]_2 O$), tetraethyl ester
Thallium	(Total)	Thallium
Tin	(Total)	Tin
Toluene	108-88-3	Benzene, methyl-
o-Toluidine	95-53-4	Benzenamine, 2-methyl-
Toxaphene	8001-35-2	Toxaphene
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-

Common Name[1]	CAS RN[2]	Chemical Abstracts Service Index Name[3]
Acenaphthene.....	83-32-9	Acenaphthylene, 1,2-dihydro-
1,1,2-Trichloroethane.....	79-00-5	Ethane, 1,1,2-trichloro-
Trichloroethylene; Trichloroethene...	79-01-6	Ethene, trichloro-
Trichlorofluoromethane.....	75-69-4	Methane, trichlorofluoro-
2,4,5-Trichlorophenol.....	95-95-4	Phenol, 2,4,5-trichloro-
2,4,6-Trichlorophenol.....	88-06-2	Phenol, 2,4,6-trichloro-
1,2,3-Trichloropropane.....	96-18-4	Propane, 1,2,3-trichloro-
O,O,O-Triethyl phosphorothioate.....	126-68-1	Phosphorothioic acid, O,O,O-triethyl ester
sym-Trinitrobenzene.....	99-35-4	Benzene, 1,3,5-trinitro-
Vanadium.....	(Total)	Vanadium
Vinyl acetate.....	108-05-4	Acetic acid, ethenyl ester
Vinyl chloride.....	75-01-4	Ethene, chloro-
Xylene (total).....	1330-20-7	Benzene, dimethyl-
Zinc.....	(Total)	Zinc

[1]Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[2]Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

[3]CAS index names are those used in the 9th Cumulative Index.

[4]Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5).

[5]This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins.

[6]This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans.

APPENDIX XIII

Land Disposal Restriction Effective Dates of Injected Prohibited Hazardous Wastes National Capacity Land Disposal Restrictions Variances for Underground Injection Control Wastes[a]		
Waste Code	**Waste Category**	**Effective Date**
F001-F005	All spent F001-F005 solvent containing less than 1 percent total F001-F005 solvent constituents	August 8, 1990
D001 (except high total organic carbon ignitable liquids subcategory)	All	February 10, 1994
D001 (high total organic carbon ignitable liquids subcategory)	Nonwastewater	September 19, 1995
D002[b]	All	May 8, 1992
D002[c]	All	May 8, 1992
D003 (cyanides)	All	May 8, 1992
D003 (sulfides)	All	May 8, 1992
D003 (explosives, reactives)	All	September 10, 1995
D007	All	September 10, 1995
D009	Non.	September 10, 1995
D012	All	September 19, 1995
D013	All	September 19, 1995
D014	All	September 19, 1995
D015	All	September 19, 1995
D016	All	September 19, 1995
D017	All, including mixed with radioactive wastes	April 8, 1998
D018	All, including mixed with radioactive wastes	April 8, 1998
D019	All, including mixed with radioactive wastes	April 8, 1998
D020	All, including mixed with radioactive wastes	April 8, 1998
D021	All, including mixed with radioactive wastes	April 8, 1998
D022	All, including mixed radioactive wastes	April 8, 1998
D023	All, including mixed radioactive wastes	April 8, 1998
D024	All, including mixed radioactive wastes	April 8, 1998
D025	All, including mixed radioactive wastes	April 8, 1998
D026	All, including mixed radioactive wastes	April 8, 1998
D027	All, including mixed radioactive wastes	April 8, 1998
D028	All, including mixed radioactive wastes	April 8, 1998
D029	All, including mixed radioactive wastes	April 8, 1998
D030	All, including mixed radioactive wastes	April 8, 1998
D031	All, including mixed radioactive wastes	April 8, 1998
D032	All, including mixed radioactive wastes	April 8, 1998

Land Disposal Restriction Effective Dates of Injected Prohibited Hazardous Wastes National Capacity Land Disposal Restrictions Variances for Underground Injection Control Wastes[a]		
Waste Code	**Waste Category**	**Effective Date**
D033	All, including mixed radioactive wastes	April 8, 1998
D034	All, including mixed radioactive wastes	April 8, 1998
D035	All, including mixed radioactive wastes	April 8, 1998
D036	All, including mixed radioactive wastes	April 8, 1998
D037	All, including mixed radioactive wastes	April 8, 1998
D038	All, including mixed radioactive wastes	April 8, 1998
D039	All, including mixed radioactive wastes	April 8, 1998
D040	All, including mixed radioactive wastes	April 8, 1998
D041	All, including mixed radioactive wastes	April 8, 1998
D042	All, including mixed radioactive wastes	April 8, 1998
D043	All, including mixed radioactive wastes	April 8, 1998
F007	All, including mixed radioactive wastes	April 8, 1998
F032	All, including mixed radioactive wastes	May 12, 1999
F034	All, including mixed radioactive wastes	May 12, 1999
F035	All, including mixed radioactive wastes	May 12, 1999
F037	All	November 8, 1992
F038	All	November 8, 1992
F039	All, including mixed radioactive wastes	May 12, 1999
K009	Wastewater	June 8, 1991
K011	Nonwastewater	June 8, 1991
K011	Wastewater	May 8, 1992
K013	Nonwastewater	June 8, 1991
K013	Wastewater	May 8, 1992
K014	All	May 8, 1992
K016 (dilute)	All	June 8, 1991
K049	All	August 8, 1990
K050	All	August 8, 1990
K051	All	August 8, 1990
K052	All	August 8, 1990
K062	All	January 8, 1997
K071	All	August 8, 1990
K088	All	November 8, 1992
K104	All	November 9, 1992
K107	All	November 9, 1992
K108	All	November 9, 1992
K109	All	November 9, 1992

Land Disposal Restriction Effective Dates of Injected Prohibited Hazardous Wastes National Capacity Land Disposal Restrictions Variances for Underground Injection Control Wastes[a]		
Waste Code	**Waste Category**	**Effective Date**
K110	All	November 9, 1992
K111	All	November 9, 1992
K112	All	June 30, 1995
K117	All	June 30, 1995
K118	All	November 9, 1992
K123	All	November 9, 1992
K124	All	November 9, 1992
K125	All	November 9, 1992
K126	All	November 9, 1992
K131	All	June 30, 1995
K132	All	November 9, 1992
K136	All	December 19, 1994
K141	All	December 19, 1994
K142	All	December 19, 1994
K143	All	December 19, 1994
K144	All	December 19, 1994
K145	All	December 19, 1994
K147	All	December 19, 1994
K148	All	December 19, 1994
K149	All	December 19, 1994
K150	All	December 19, 1994
K151	All	July 8, 1996
K156	All	July 8, 1996
K157	All	July 8, 1996
K158	All	July 8, 1996
K159	All	July 8, 1996
K160	All	July 8, 1996
K161	All	July 8, 1996
NA	Newly identified mineral processing wastes from titanium dioxide production and mixed radioactive, newly identified D004 through D011 characteristic wastes and mineral processing wastes	May 26, 2000
P127	All	July 8, 1996
P128	All	July 8, 1996
P185	All	July 8, 1996
P188	All	July 8, 1996
P189	All	July 8, 1996

Land Disposal Restriction Effective Dates of Injected Prohibited Hazardous Wastes National Capacity Land Disposal Restrictions Variances for Underground Injection Control Wastes[a]		
Waste Code	**Waste Category**	**Effective Date**
P190	All	July 8, 1996
P191	All	July 8, 1996
P192	All	July 8, 1996
P194	All	July 8, 1996
P196	All	July 8, 1996
P197	All	July 8, 1996
P198	All	July 8, 1996
P199	All	July 8, 1996
P201	All	July 8, 1996
P202	All	July 8, 1996
P203	All	July 8, 1996
P204	All	July 8, 1996
P205	All	July 8, 1996
U271	All	July 8, 1996
U277	All	July 8, 1996
U278	All	July 8, 1996
U279	All	July 8, 1996
U280	All	July 8, 1996
U328	All	November 9, 1992
U353	All	November 9, 1992
U359	All	November 9, 1992
U364	All	July 8, 1996
U365	All	July 8, 1996
U366	All	July 8, 1996
U367	All	July 8, 1996
U372	All	July 8, 1996
U373	All	July 8, 1996
U375	All	July 8, 1996
U376	All	July 8, 1996
U377	All	July 8, 1996
U378	All	July 8, 1996
U379	All	July 8, 1996
U381	All	July 8, 1996
U382	All	July 8, 1996
U383	All	July 8, 1996
U384	All	July 8, 1996

Land Disposal Restriction Effective Dates of Injected Prohibited Hazardous Wastes National Capacity Land Disposal Restrictions Variances for Underground Injection Control Wastes[a]		
Waste Code	**Waste Category**	**Effective Date**
U385	All	July 8, 1996
U386	All	July 8, 1996
U387	All	July 8, 1996
U389	All	July 8, 1996
U390	All	July 8, 1996
U391	All	July 8, 1996
U392	All	July 8, 1996
U395	All	July 8, 1996
U396	All	July 8, 1996
U400	All	July 8, 1996
U401	All	July 8, 1996
U402	All	July 8, 1996
U403	All	July 8, 1996
U404	All	July 8, 1996
U407	All	July 8, 1996
U409	All	July 8, 1996
U410	All	July 8, 1996
U411	All	July 8, 1996
[a]Wastes that are deep well disposed onsite receive a six-month variance, with restrictions effective in November 1990.		
[b]Deep well injected D002 liquids with a pH less than 2 must meet the California List treatment standards on August 8, 1990.		
[c]Managed in systems defined in 40 CFR 144.6(e) and 14.6(e) as Class V injection wells, that do not engage in Clean Water Act-equivalent treatment before injection.		
Note: This table is provided for the convenience of the reader.		

APPENDIX XIV

[Reserved]

APPENDIX XV

[Reserved]

APPENDIX XVI

Tier I and Tier II Feed Rate and Emissions Screening Limits for Metals

Table I-A. Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Noncomplex Terrain

Values for Urban Areas

TESH (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	6.0E+01	1.0E+04	1.8E+01	6.0E+01	6.0E+02	6.0E+01
6	6.8E+01	1.1E+04	2.0E+01	6.8E+01	6.8E+02	6.8E+01
8	7.6E+01	1.3E+04	2.3E+01	7.6E+01	7.6E+02	7.6E+01
10	8.6E+01	1.4E+04	2.6E+01	8.6E+01	8.6E+02	8.6E+01
12	9.6E+01	1.7E+04	3.0E+01	9.6E+01	9.6E+02	9.6E+01
14	1.1E+02	1.8E+04	3.4E+01	1.1E+02	1.1E+03	1.1E+02
16	1.3E+02	2.1E+04	3.6E+01	1.3E+02	1.3E+03	1.3E+02
18	1.4E+02	2.4E+04	4.3E+01	1.4E+02	1.4E+03	1.4E+02
20	1.6E+02	2.7E+04	4.6E+01	1.6E+02	1.6E+03	1.6E+02
22	1.8E+02	3.0E+04	5.4E+01	1.8E+02	1.8E+03	1.8E+02
24	2.0E+02	3.4E+04	6.0E+01	2.0E+02	2.0E+03	2.0E+02
26	2.3E+02	3.9E+04	6.8E+01	2.3E+02	2.3E+03	2.3E+02
28	2.6E+02	4.3E+04	7.8E+01	2.6E+02	2.6E+03	2.6E+02
30	3.0E+02	5.0E+04	9.0E+01	3.0E+02	3.0E+03	3.0E+02
35	4.0E+02	6.6E+04	1.1E+02	4.0E+02	4.0E+03	4.0E+02
40	4.6E+02	7.8E+04	1.4E+02	4.6E+02	4.6E+03	4.6E+02
45	6.0E+02	1.0E+05	1.8E+02	6.0E+02	6.0E+03	6.0E+02
50	7.8E+02	1.3E+05	2.3E+02	7.8E+02	7.8E+03	7.8E+02
55	9.6E+02	1.7E+05	3.0E+02	9.6E+02	9.6E+03	9.6E+02
60	1.2E+03	2.0E+05	3.6E+02	1.2E+03	1.2E+04	1.2E+03
65	1.5E+03	2.5E+05	4.3E+02	1.5E+03	1.5E+04	1.5E+03
70	1.7E+03	2.8E+05	5.0E+02	1.7E+03	1.7E+04	1.7E+03
75	1.9E+03	3.2E+05	5.8E+02	1.9E+03	1.9E+04	1.9E+03
80	2.2E+03	3.6E+05	6.4E+02	2.2E+03	2.2E+04	2.2E+04
85	2.5E+03	4.0E+05	7.6E+02	2.5E+03	2.5E+04	2.5E+03
90	2.8E+03	4.6E+05	8.2E+02	2.8E+03	2.8E+04	2.8E+03
95	3.2E+03	5.4E+05	9.6E+02	3.2E+03	3.2E+04	3.2E+03
100	3.6E+03	6.0E+05	1.1E+03	3.6E+03	3.6E+04	3.6E+03
105	4.0E+03	6.8E+05	1.2E+03	4.0E+03	4.0E+04	4.0E+03
110	4.6E+03	7.8E+05	1.4E+03	4.6E+03	4.6E+04	4.6E+03
115	5.4E+03	8.6E+05	1.6E+03	5.4E+03	5.4E+04	5.4E+03

Tier I and Tier II Feed Rate and Emissions Screening Limits for Metals

Table I-A. Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Noncomplex Terrain

Values for Urban Areas

TESH (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	6.0E+01	1.0E+04	1.8E+01	6.0E+01	6.0E+02	6.0E+01
120	6.0E+03	1.0E+06	1.8E+03	6.0E+03	6.0E+04	6.0E+03

Table I-B. Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Noncomplex Terrain

Values for Rural Areas

TESH (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	3.1E+01	5.2E+03	9.4E+00	3.1E+01	3.1E+02	3.1E+01
6	3.6E+01	6.0E+03	1.1E+01	3.6E+01	3.6E+02	3.6E+01
8	4.0E+01	6.8E+03	1.2E+01	4.0E+01	4.0E+02	4.0E+01
10	4.6E+01	7.8E+03	1.4E+01	4.6E+01	4.6E+02	4.6E+01
12	5.8E+01	9.6E+03	1.7E+01	5.8E+01	5.8E+02	5.8E+01
14	6.8E+01	1.1E+04	2.1E+01	6.8E+01	6.8E+02	6.8E+01
16	8.6E+01	1.4E+04	2.6E+01	8.6E+01	8.6E+02	8.6E+01
18	1.1E+02	1.8E+04	3.2E+01	1.1E+02	1.1E+03	1.1E+02
20	1.3E+02	2.2E+04	4.0E+01	1.3E+02	1.3E+03	1.3E+02
22	1.7E+02	2.8E+04	5.0E+01	1.7E+02	1.7E+03	1.7E+02
24	2.2E+02	3.6E+04	6.4E+01	2.2E+02	2.2E+03	2.2E+02
26	2.8E+02	4.6E+04	8.2E+01	2.8E+02	2.8E+03	2.8E+02
28	3.5E+02	5.8E+04	1.0E+02	3.5E+02	3.5E+03	3.5E+02
30	4.3E+02	7.6E+04	1.3E+02	4.3E+02	4.3E+03	4.3E+02
35	7.2E+02	1.2E+05	2.1E+02	7.2E+02	7.2E+03	7.2E+02
40	1.1E+03	1.8E+05	3.2E+02	1.1E+03	1.1E+04	1.1E+03
45	1.5E+03	2.5E+05	4.6E+02	1.5E+03	1.5E+04	1.5E+03
50	2.0E+03	3.3E+05	6.0E+02	2.0E+03	2.0E+04	2.0E+03
55	2.6E+03	4.4E+05	7.8E+02	2.6E+03	2.6E+04	2.6E+03
60	3.4E+03	5.8E+05	1.0E+03	3.4E+03	3.4E+04	3.4E+03
65	4.6E+03	7.6E+05	1.4E+03	4.6E+03	4.6E+04	4.6E+03
70	5.4E+03	9.0E+05	1.6E+03	5.4E+03	5.4E+04	5.4E+03
75	6.4E+03	1.1E+06	1.9E+03	6.4E+03	6.4E+04	6.4E+03

Table I-B. Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Noncomplex Terrain						
Values for Rural Areas						
TESH (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	3.1E+01	5.2E+03	9.4E+00	3.1E+01	3.1E+02	3.1E+01
80	7.6E+03	1.3E+06	2.3E+03	7.6E+03	7.6E+04	7.6E+03
85	9.4E+03	1.5E+06	2.8E+03	9.4E+03	9.4E+04	9.4E+03
90	1.1E+04	1.8E+06	3.3E+03	1.1E+04	1.1E+05	1.1E+04
95	1.3E+04	2.2E+06	3.9E+03	1.3E+04	1.3E+05	1.3E+04
100	1.5E+04	2.6E+06	4.6E+03	1.5E+04	1.5E+05	1.5E+04
105	1.8E+04	3.0E+06	5.4E+03	1.8E+04	1.8E+05	1.8E+04
110	2.2E+04	3.6E+06	6.6E+03	2.2E+04	2.2E+05	2.2E+04
115	2.6E+04	4.4E+06	7.8E+03	2.6E+04	2.6E+05	2.6E+04
120	3.1E+04	5.0E+06	9.2E+03	3.1E+04	3.1E+05	3.1E+04

Table I-C. Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Complex Terrain						
Values for Urban and Rural Areas						
TESH (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	1.4E+01	2.4E+03	4.3E+00	1.4E+01	1.4E+02	1.4E+01
6	2.1E+01	3.5E+03	6.2E+00	2.1E+01	2.1E+02	2.1E+01
8	3.0E+01	5.0E+03	9.2E+00	3.0E+01	3.0E+02	3.0E+01
10	4.3E+01	7.6E+03	1.3E+01	4.3E+01	4.3E+02	4.3E+01
12	5.4E+01	9.0E+03	1.7E+01	5.4E+01	5.4E+02	5.4E+01
14	6.8E+01	1.1E+04	2.0E+01	6.8E+01	6.8E+02	6.8E+01
16	7.8E+01	1.3E+04	2.4E+01	7.8E+01	7.8E+02	7.8E+01
18	8.6E+01	1.4E+04	2.6E+01	8.6E+01	8.6E+02	8.6E+01
20	9.6E+01	1.6E+04	2.9E+01	9.6E+01	9.6E+02	9.6E+01
22	1.0E+02	1.8E+04	3.2E+01	1.0E+02	1.0E+03	1.0E+02
24	1.2E+02	1.9E+04	3.5E+01	1.2E+02	1.2E+03	1.2E+02
26	1.3E+02	2.2E+04	3.6E+01	1.3E+02	1.3E+03	1.3E+02
28	1.4E+02	2.4E+04	4.3E+01	1.4E+02	1.4E+03	1.4E+02
30	1.6E+02	2.7E+04	4.6E+01	1.6E+02	1.6E+03	1.6E+02
35	2.0E+02	3.3E+04	5.8E+01	2.0E+02	2.0E+03	2.0E+02
40	2.4E+02	4.0E+04	7.2E+01	2.4E+02	2.4E+03	2.4E+02

Table I-C. Tier I and Tier II Feed Rate and Emissions Screening Limits for Noncarcinogenic Metals for Facilities in Complex Terrain						
Values for Urban and Rural Areas						
TESH (m)	Antimony (g/hr)	Barium (g/hr)	Lead (g/hr)	Mercury (g/hr)	Silver (g/hr)	Thallium (g/hr)
4	1.4E+01	2.4E+03	4.3E+00	1.4E+01	1.4E+02	1.4E+01
45	3.0E+02	5.0E+04	9.0E+01	3.0E+02	3.0E+03	3.0E+02
50	3.6E+02	6.0E+04	1.1E+02	3.6E+02	3.6E+03	3.6E+02
55	4.6E+02	7.6E+04	1.4E+02	4.6E+02	4.6E+03	4.6E+02
60	5.8E+02	9.4E+04	1.7E+02	5.8E+02	5.8E+03	5.8E+02
65	6.8E+02	1.1E+05	2.1E+02	6.8E+02	6.8E+03	6.8E+02
70	7.8E+02	1.3E+05	2.4E+02	7.8E+02	7.8E+03	7.8E+02
75	8.6E+02	1.4E+05	2.6E+02	8.6E+02	8.6E+03	8.6E+02
80	9.6E+02	1.6E+05	2.9E+02	9.6E+02	9.6E+03	9.6E+02
85	1.1E+03	1.8E+05	3.3E+02	1.1E+03	1.1E+04	1.1E+03
90	1.2E+03	2.0E+05	3.6E+02	1.2E+03	1.2E+04	1.2E+03
95	1.4E+03	2.3E+05	4.0E+02	1.4E+03	1.4E+04	1.4E+03
100	1.5E+03	2.6E+05	4.6E+02	1.5E+03	1.5E+04	1.5E+03
105	1.7E+03	2.8E+05	5.0E+02	1.7E+03	1.7E+04	1.7E+03
110	1.9E+03	3.2E+05	5.8E+02	1.9E+03	1.9E+04	1.9E+03
115	2.1E+03	3.6E+05	6.4E+02	2.1E+03	2.1E+04	2.1E+03
120	2.4E+03	4.0E+05	7.2E+02	2.4E+03	2.4E+04	2.4E+03

Table I-D. Tier I and Tier II Feed Rate and Emissions Screening Limits for Carcinogenic Metals for Facilities in Noncomplex Terrain								
	Values for Use in *Urban* Areas				Values for Use in *Rural* Areas			
TESH (m)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)
4	4.6E-01	1.1E+00	1.7E-01	8.2E-01	2.4E-01	5.8E-01	8.6E-02	4.3E-01
6	5.4E-01	1.3E+00	1.9E-01	9.4E-01	2.8E-01	6.6E-01	1.0E-01	5.0E-01
8	6.0E-01	1.4E+00	2.2E-01	1.1E+00	3.2E-01	7.6E-01	1.1E-01	5.6E-01
10	6.8E-01	1.6E+00	2.4E-01	1.2E+00	3.6E-01	8.6E-01	1.3E-01	6.4E-01
12	7.6E-01	1.8E+00	2.7E-01	1.4E+00	4.3E-01	1.1E+00	1.6E-01	7.8E-01
14	8.6E-01	2.1E+00	3.1E-01	1.5E+00	5.4E-01	1.3E+00	2.0E-01	9.6E-01
16	9.6E-01	2.3E+00	3.5E-01	1.7E+00	6.8E-01	1.6E+00	2.4E-01	1.2E+00
18	1.1E+00	2.6E+00	4.0E-01	2.0E+00	8.2E-01	2.0E+00	3.0E-01	1.5E+00
20	1.2E+00	3.0E+00	4.4E-01	2.2E+00	1.0E+00	2.5E+00	3.7E-01	1.9E+00
22	1.4E+00	3.4E+00	5.0E-01	2.5E+00	1.3E+00	3.2E+00	4.8E-01	2.4E+00
24	1.6E+00	3.9E+00	5.8E-01	2.8E+00	1.7E+00	4.0E+00	6.0E-01	3.0E+00

Table I-D. Tier I and Tier II Feed Rate and Emissions Screening Limits for Carcinogenic Metals for Facilities in Noncomplex Terrain								
	Values for Use in *Urban* Areas				Values for Use in *Rural* Areas			
TESH (m)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)
4	4.6E-01	1.1E+00	1.7E-01	8.2E-01	2.4E-01	5.8E-01	8.6E-02	4.3E-01
26	1.8E+00	4.3E+00	6.4E-01	3.2E+00	2.1E+00	5.0E+00	7.6E-01	3.9E+00
28	2.0E+00	4.8E+00	7.2E-01	3.6E+00	2.7E+00	6.4E+00	9.8E-01	5.0E+00
30	2.3E+00	5.4E+00	8.2E-01	4.0E+00	3.5E+00	8.2E+00	1.2E+00	6.2E+00
35	3.0E+00	6.8E+00	1.0E+00	5.4E+00	5.4E+00	1.3E+01	1.9E+00	9.6E+00
40	3.6E+00	9.0E+00	1.3E+00	6.8E+00	8.2E+00	2.0E+01	3.0E+00	1.5E+01
45	4.6E+00	1.1E+01	1.7E+00	8.6E+00	1.1E+01	2.8E+01	4.2E+00	2.1E+01
50	6.0E+00	1.4E+01	2.2E+00	1.1E+01	1.5E+01	3.7E+01	5.4E+00	2.8E+01
55	7.6E+00	1.8E+01	2.7E+00	1.4E+01	2.0E+01	5.0E+01	7.2E+00	3.6E+01
60	9.4E+00	2.2E+01	3.4E+00	1.7E+01	2.7E+01	6.4E+01	9.6E+00	4.8E+01
65	1.1E+01	2.8E+01	4.2E+00	2.1E+01	3.6E+01	8.6E+01	1.3E+01	6.4E+01
70	1.3E+01	3.1E+01	4.6E+00	2.4E+01	4.3E+01	1.0E+02	1.5E+01	7.6E+01
75	1.5E+01	3.6E+01	5.4E+01	2.7E+01	5.0E+01	1.2E+02	1.8E+01	9.0E+01
80	1.7E+01	4.0E+01	6.0E+00	3.0E+01	6.0E+01	1.4E+02	2.2E+01	1.1E+02
85	1.9E+01	4.6E+01	6.8E+00	3.4E+01	7.2E+01	1.7E+02	2.6E+01	1.3E+02
90	2.2E+01	5.0E+01	7.8E+00	3.9E+01	8.6E+01	2.0E+02	3.0E+01	1.5E+02
95	2.5E+01	5.8E+01	9.0E+00	4.4E+01	1.0E+02	2.4E+02	3.6E+01	1.8E+02
100	2.8E+01	6.8E+01	1.0E+01	5.0E+01	1.2E+02	2.9E+02	4.3E+01	2.2E+02
105	3.2E+01	7.6E+01	1.1E+01	5.6E+01	1.4E+02	3.4E+02	5.0E+01	2.6E+02
110	3.6E+01	8.6E+01	1.3E+01	6.4E+01	1.7E+02	4.0E+02	6.0E+01	3.0E+02
115	4.0E+01	9.6E+01	1.5E+01	7.2E+01	2.0E+02	4.8E+02	7.2E+01	3.6E+02
120	4.6E+01	1.1E+02	1.7E+01	8.2E+01	2.4E+02	5.8E+02	8.6E+01	4.3E+02

Table I-E. Tier I and Tier II Feed Rate and Emissions Screening Limits for Carcinogenic Metals for Facilities in Complex Terrain				
Values for Use in *Urban* and *Rural* Areas				
TESH (m)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)
4	1.1E-01	2.6E-01	4.0E-02	2.0E-01
6	1.6E-01	3.9E-01	5.8E-02	2.9E-01
8	2.4E-01	5.8E-01	8.6E-02	4.3E-01
10	3.5E-01	8.2E-01	1.3E-01	6.2E-01
12	4.3E-01	1.0E+00	1.5E-01	7.6E-01
14	5.0E-01	1.3E+00	1.9E-01	9.4E-01
16	6.0E-01	1.4E+00	2.2E-01	1.1E+00

Table I-E. Tier I and Tier II Feed Rate and Emissions Screening Limits for Carcinogenic Metals for Facilities in Complex Terrain				
Values for Use in *Urban* and *Rural* Areas				
TESH (m)	Arsenic (g/hr)	Cadmium (g/hr)	Chromium (g/hr)	Beryllium (g/hr)
4	1.1E-01	2.6E-01	4.0E-02	2.0E-01
18	6.8E-01	1.6E+00	2.4E-01	1.2E+00
20	7.6E-01	1.8E+00	2.7E-01	1.3E+00
22	8.2E-01	1.9E+00	3.0E-01	1.5E+00
24	9.0E-01	2.1E+00	3.3E-01	1.6E+00
26	1.0E+00	2.4E+00	3.6E-01	1.8E+00
28	1.1E+00	2.7E+00	4.0E-01	2.0E+00
30	1.2E+00	3.0E+00	4.4E-01	2.2E+00
35	1.5E+00	3.7E+00	5.4E-01	2.7E+00
40	1.9E+00	4.6E+00	6.8E-01	3.4E+00
45	2.4E+00	5.4E+00	8.4E-01	4.2E+00
50	2.9E+00	6.8E+00	1.0E+00	5.0E+00
55	3.5E+00	8.4E+00	1.3E+00	6.4E+00
60	4.3E+00	1.0E+01	1.5E+00	7.8E+00
65	5.4E+00	1.3E+01	1.9E+00	9.6E+00
70	6.0E+00	1.4E+01	2.2E+00	1.1E+01
75	6.8E+00	1.6E+01	2.4E+00	1.2E+01
80	7.6E+00	1.8E+01	2.7E+00	1.3E+01
85	8.2E+00	2.0E+01	3.0E+00	1.5E+01
90	9.4E+00	2.3E+01	3.4E+00	1.7E+01
95	1.0E+01	2.5E+01	4.0E+00	1.9E+01
100	1.2E+01	2.8E+01	4.3E+00	2.1E+01
105	1.3E+01	3.2E+01	4.8E+00	2.4E+01
110	1.5E+01	3.5E+01	5.4E+00	2.7E+01
115	1.7E+01	4.0E+01	6.0E+00	3.0E+01
120	1.9E+01	4.4E+01	6.4E+00	3.3E+01

APPENDIX XVII

Tier I - Feed Rate Screening Llimits for Total Chlorine			
Terrain-Adjusted Effective Stack Heights (TESH) (meters)	Noncomplex Terrain		Complex Terrain
	Urban (g/hr)	Rural (g/hr)	(g/hr)
4	8.2E+01	4.2E+01	1.9E+01
6	9.1E+01	4.8E+01	2.8E+01
8	1.0E+02	5.3E+01	4.1E+01
10	1.2E+02	6.2E+01	5.8E+01
12	1.3E+02	7.7E+01	7.2E+01
14	1.5E+02	9.1E+01	9.1E+01
16	1.7E+02	1.2E+02	1.1E+02
18	1.9E+02	1.4E+02	1.2E+02
20	2.1E+02	1.8E+02	1.3E+02
22	2.4E+02	2.3E+02	1.4E+02
24	2.7E+02	2.9E+02	1.6E+02
26	3.1E+02	3.7E+02	1.7E+02
28	3.5E+02	4.7E+02	1.9E+02
30	3.9E+02	5.8E+02	2.1E+02
35	5.3E+02	9.6E+02	2.6E02
40	6.2E+02	1.4E+03	3.3E+02
45	8.2E+02	2.0E+03	4.0E+02
50	1.1E+03	2.6E+03	4.8E+02
55	1.3E+03	3.5E+03	6.3E+02
60	1.6E+03	4.6E+03	7.7E+02
65	2.0E+03	6.2E+03	9.1E+02
70	2.3E+03	7.2E+03	1.1E+03
75	2.5E+03	8.6E+03	1.2E+03
80	2.9E+03	1.0E+04	1.3E+03
85	3.3E+03	1.2E+04	1.4E+03
90	3.7E+03	1.4E+04	1.6E+03
95	4.2E+03	1.7E+04	1.8E+03
100	4.8E+03	2.1E+04	2.0E+03
105	5.3E+03	2.4E+04	2.3E+03
110	6.2E+03	2.9E+04	2.5E+03
115	7.2E+03	3.5E+04	2.8E+03
120	8.2E+03	4.1E+04	3.2E+03

APPENDIX XVIII

Tier II- Emission Rate Screening Limits for Free Chlorine and Hydrogen Chloride						
Terrain-Adjusted Effective Stack Heights (TESH) (meters)	Noncomplex Terrain				Complex Terrain	
	Values for Urban Areas		Values for Rural Areas		Values for Use in Urban Areas and Rural Areas	
	Cl_2 (g/hr)	HCl (g/hr)	Cl_2 (g/hr)	HCl (g/hr)	Cl_2 (g/hr)	HCl (g/hr)
4	8.2E+01	1.4E+03	4.2E+01	7.3E+02	1.9E+01	3.3E+02
6	9.1E+01	1.6E+03	4.8E+01	8.3E+02	2.8E+01	4.9E+02
8	1.0E+02	1.8E+03	5.3E+01	9.2E+02	4.1E+01	7.1E+02
10	1.2E+02	2.0E+03	6.2E+01	1.1E+03	5.8E+01	1.0E+03
12	1.3E+02	2.3E+03	7.7E+01	1.3E+03	7.2E+01	1.3E+03
14	1.5E+02	2.6E+03	9.1E+01	1.6E+03	9.1E+01	1.6E+03
16	1.7E+02	2.9E+03	1.2E+02	2.0E+03	1.1E+02	1.8E+03
18	1.9E+02	3.3E+03	1.4E+02	2.5E+03	1.2E+02	2.0E+03
20	2.1E+02	3.7E+03	1.8E+02	3.1E+03	1.3E+02	2.3E+03
22	2.4E+02	4.2E+03	2.3E+02	3.9E+03	1.4E+02	2.4E+03
24	2.7E+02	4.8E+03	2.9E+02	5.0E+03	1.6E+02	2.8E+03
26	3.1E+02	5.4E+03	3.7E+02	6.5E+03	1.7E+02	3.0E+03
28	3.5E+02	6.0E+03	4.7E+02	8.1E+03	1.9E+02	3.4E+03
30	3.9E+02	6.9E+03	5.8E+02	1.0E+04	2.1E+02	3.7E+03
35	5.3E+02	9.2E+03	9.6E+02	1.7E+04	2.6E+02	4.6E+03
40	6.2E+02	1.1E+04	1.4E+03	2.5E+04	3.3E+02	5.7E+03
45	8.2E+02	1.4E+04	2.0E+03	3.5E+04	4.0E+02	7.0E+03
50	1.1E+03	1.8E+04	2.6E+03	4.6E+04	4.8E+02	8.4E+03
55	1.3E+03	2.3E+04	3.5E+03	6.1E+04	6.2E+02	1.1E+04
60	1.6E+03	2.9E+04	4.6E+03	8.1E+04	7.7E+02	1.3E+04
65	2.0E+03	3.4E+04	6.2E+03	1.1E+05	9.1E+02	1.6E+04
70	2.3E+03	3.9E+04	7.2E+03	1.3E+05	1.1E+03	1.8E+04
75	2.5E+03	4.5E+04	8.6E+03	1.5E+05	1.2E+03	2.0E+04
80	2.9E+03	5.0E+04	1.0E+04	1.8E+05	1.3E+03	2.3E+04
85	3.3E+03	5.8E+04	1.2E+04	2.2E+05	1.4E+03	2.5E+04
90	3.7E+03	6.6E+04	1.4E+04	2.5E+05	1.6E+03	2.9E+04
95	4.2E+03	7.4E+04	1.7E+04	3.0E+05	1.8E+03	3.2E+04
100	4.8E+03	8.4E+04	2.1E+04	3.6E+05	2.0E+03	3.5E+04
105	5.3E+03	9.2E+04	2.4E+04	4.3E+05	2.3E+03	3.9E+04
110	6.2E+03	1.1E+05	2.9E+04	5.1E+05	2.5E+03	4.5E+04
115	7.2E+03	1.3E+05	3.5E+04	6.1E+05	2.8E+03	5.0E+04
120	8.2E+03	1.4E+05	4.1E+04	7.2E+05	3.2E+03	5.6E+04

APPENDIX XIX

Reference Air Concentrations*		
Constituent	**CAS No.**	**Reference Air Concentraion (µg/m^3)**
Acetaldehyde	75-07-0	10
Acetonitrile	75-05-8	10
Acetophenone	98-86-2	100
Acrolein	107-02-8	20
Aldicarb	116-06-3	1
Aluminum Phosphide	20859-73-8	0.3
Allyl Alcohol	107-18-6	5
Antimony	7440-36-0	0.3
Barium	7440-39-3	50
Barium Cyanide	542-62-1	50
Bromomethane	74-83-9	0.8
Calcium Cyanide	592-01-8	30
Carbon Disulfide	75-15-0	200
Chloral	75-87-6	2
Chlorine (free)		0.4
2-Chloro-1,3-butadiene	126-99-8	3
Chromium III	16065-83-1	1000
Copper Cyanide	544-92-3	5
Cresols	1319-77-3	50
Cumene	98-82-8	1
Cyanide (free)	57-12-15	20
Cyanogen	460-19-5	30
Cyanogen Bromide	506-68-3	80
Di-n-butyl Phthalate	84-74-2	100
o-Dichlorobenzene	95-50-1	10
p-Dichlorobenzene	106-46-7	10
Dichlorodifluoromethane	75-71-8	200
2,4-Dichlorophenol	120-83-2	3
Diethyl Phthalate	84-66-2	800
Dimethoate	60-51-5	0.8
2,4-Dinitrophenol	51-28-5	2
Dinoseb	88-85-7	0.9

Reference Air Concentrations*		
Constituent	**CAS No.**	**Reference Air Concentraion (µg/m^3)**
Diphenylamine	122-39-4	20
Endosulfan	115-29-1	0.05
Endrin	72-20-8	0.3
Fluorine	7782-41-4	50
Formic Acid	64-18-6	2000
Glycidyaldehyde	765-34-4	0.3
Hexachlorocyclopentadiene	77-47-4	5
Hexachlorophene	70-30-4	0.3
Hydrocyanic Acid	74-90-8	20
Hydrogen Chloride	7647-01-1	7
Hydrogen Sulfide	7783-06-4	3
Isobutyl Alcohol	78-83-1	300
Lead	7439-92-1	0.09
Maleic Anhydride	108-31-6	100
Mercury	7439-97-6	0.3
Methacrylonitrile	126-98-7	0.1
Methomyl	16752-77-5	20
Methoxychlor	72-43-5	50
Methyl Chlorocarbonate	79-22-1	1000
Methyl Ethyl Ketone	78-93-3	80
Methyl Parathion	298-00-0	0.3
Nickel Cyanide	557-19-7	20
Nitric Oxide	10102-43-9	100
Nitrobenzene	98-95-3	0.8
Pentachlorobenzene	608-93-5	0.8
Pentachlorophenol	87-86-5	30
Phenol	108-95-2	30
M-Phenylenediamine	108-45-2	5
Phenylmercuric Acetate	62-38-4	0.075
Phosphine	7803-51-2	0.3
Phthalic Anhydride	85-44-9	2000
Potassium Cyanide	151-50-8	50
Potassium Silver Cyanide	506-61-6	200

Reference Air Concentrations*		
Constituent	**CAS No.**	**Reference Air Concentraion (µg/m^3)**
Pyridine	110-86-1	1
Selenious Acid	7783-60-8	3
Selenourea	630-10-4	5
Silver	7440-22-4	3
Silver Cyanide	506-64-9	100
Sodium Cyanide	143-33-9	30
Strychnine	57-24-9	0.3
1,2,4,5-Tetrachlorobenzene	95-94-3	0.3
2,3,4,6-Tetrachlorophenol	58-90-2	30
Tetraethyl Lead	78-00-2	0.0001
Tetrahydrofuran	109-99-9	10
Thallic Oxide	1314-32-5	0.3
Thallium	7440-28-0	0.5
Thallium (I) Acetate	563-68-8	0.5
Thallium (I) Carbonate	6533-73-9	0.3
Thallium (I) Chloride	7791-12-0	0.3
Thallium (I) Nitrate	10102-45-1	0.5
Thallium Selenite	12039-52-0	0.5
Thallium (I) Sulfate	7446-18-6	0.075
Thiram	137-26-8	5
Toluene	108-88-3	300
1,2,4-Trichlorobenzene	120-82-1	20
Trichloromonofluoromethane	75-69-4	300
2,4,5-Trichlorophenol	95-95-4	100
Vanadium Pentoxide	1314-62-1	20
Warfarin	81-81-2	0.3
Xylenes	1330-20-7	80
Zinc Cyanide	557-21-1	50
Zinc Phosphide	1314-84-7	0.3
*The reference air concentration for other appendix V of chapter 33-24-02 constituents not listed herein or in appendix XX of chapter 33-24-05 is 0.1 µg/m^3.		

APPENDIX XX

Risk Specific Doses (10^{-5})

Constituent	CAS No.	Unit Risk (m3/µg)	RSD ($\mu g/m^3$)
Acrylamide	79-06-1	1.3E-03	7.7E-03
Acrylonitrile	107-13-1	6.8E-05	1.5E-01
Aldrin	309-00-2	4.9E-03	2.0E-03
Aniline	62-53-3	7.4E-06	1.4E+00
Arsenic	7440-38-2	4.3E-03	2.3E-03
Benz(a)anthracene	56-55-3	8.9E-04	1.1E-02
Benzene	71-43-2	8.3E-06	1.2E+00
Benzidine	92-87-5	6.7E-02	1.5E-04
Benzo(a)pyrene	50-32-8	3.3E-03	3.0E-03
Beryllium	7440-41-7	2.4E-03	4.2E-03
Bis(2-chloroethyl)ether	111-44-4	3.3E-04	3.0E-02
Bis(chloromethyl)ether	542-88-1	6.2E-02	1.6E-04
Bis(2-ethylhexyl)-phthalate	117-81-7	2.4E-07	4.2E+01
1,3-Butadiene	106-99-0	2.8E-04	3.6E-02
Cadmium	7440-43-9	1.8E-03	5.6E-03
Carbon Tetrachloride	56-23-5	1.5E-05	6.7E-01
Chlordane	57-74-9	3.7E-04	2.7E-02
Chloroform	67-66-3	2.3E-05	4.3E-01
Chloromethane	74-87-3	3.6E-06	2.8E+00
Chromium VI	7440-47-3	1.2E-02	8.3E-04
DDT	50-29-3	9.7E-05	1.0E-01
Dibenz(a,h)anthracene	53-70-3	1.4E-02	7.1E-04
1,2-Dibromo-3-chloro-propane	96-12-8	6.3E-03	1.6E-03
1,2-Dibromoethane	106-93-4	2.2E-04	4.5E-02
1,1-Dichloroethane	75-34-3	2.6E-05	3.8E-01
1,2-Dichloroethane	107-06-2	2.6E-05	3.8E-01
1,1-Dichloroethylene	75-35-4	5.0E-05	2.0E-01
1,3-Dichloropropene	542-75-6	3.5E-01	2.9E-05
Dieldrin	60-57-1	4.6E-03	2.2E-03
Diethylstilbestrol	56-53-1	1.4E-01	7.1E-05
Dimethylnitrosamine	62-75-9	1.4E-02	7.1E-04
2,4-Dinitrotoluene	121-14-2	8.8E-05	1.1E-01
1,2-Diphenylhydrazine	122-66-7	2.2E-04	4.5E-02
1,4-Dioxane	123-91-1	1.4E-06	7.1E+00
Epichlorohydrin	106-89-8	1.2E-06	8.3E+00
Ethylene Oxide	75-21-8	1.0E-04	1.0E-01
Ethylene Dibromide	106-93-4	2.2E-04	4.5E-02
Formaldehyde	50-00-0	1.3E-05	7.7E-01
Heptachlor	76-44-8	1.3E-03	7.7E-03
Heptachlor Epoxide	1024-57-3	2.6E-03	3.8E-03

Constituent	CAS No.	Unit Risk (m3/µg)	RSD (µg/m^3)
Hexachlorobenzene	118-74-1	4.9E-04	2.0E-02
Hexachlorobutadiene	87-68-3	2.0E-05	5.0E-01
Alpha-hexachloro-cyclo-hexane	319-84-6	1.8E-03	5.6E-03
Beta-hexachloro-cyclo-hexane	319-85-7	5.3E-04	1.9E-02
Gamma-hexachloro-cyclo-hexane	58-89-9	3.8E-04	2.6E-02
Hexachlorocyclohexane, Technical		5.1E-04	2.0E-02
Hexachlorodibenzo-p-dioxin (1,2 Mixture)		1.3E+0	7.7E-06
Hexachloroethane	67-72-1	4.0E-06	2.5E+00
Hydrazine	302-01-2	2.9E-03	3.4E-03
Hydrazine Sulfate	302-01-2	2.9E-03	3.4E-03
3-Methylcholanthrene	56-49-5	2.7E-03	3.7E-03
Methyl Hydrazine	60-34-4	3.1E-04	3.2E-02
Methylene Chloride	75-09-2	4.1E-06	2.4E+00
4,4'-Methylene-bis-2-chloroaniline	101-14-4	4.7E-05	2.1E-01
Nickel	7440-02-0	2.4E-04	4.2E-02
Nickel Refinery Dust	7440-02-0	2.4E-04	4.2E-02
Nickel Subsulfide	12035-72-2	4.8E-04	2.1E-02
2-Nitropropane	79-46-9	2.7E-02	3.7E-04
N-Nitroso-n-butylamine	924-16-3	1.6E-03	6.3E-03
N-Nitroso-n-methylurea	684-93-5	8.6E-02	1.2E-04
N-Nitrosodiethylamine	55-18-5	4.3E-02	2.3E-04
N-Nitrosopyrrolidine	930-55-2	6.1E-04	1.6E-02
Pentachloronitrobenzene	82-68-8	7.3E-05	1.4E-01
PCBs	1336-36-3	1.2E-03	8.3E-03
Pronamide	23950-58-5	4.6E-06	2.2E+00
Reserpine	50-55-5	3.0E-03	3.3E-03
2,3,7,8-Tetrachloro-dibenzo-p-dioxin	1746-01-6	4.5E+01	2.2E-07
1,1,2,2-Tetrachloroethane	79-34-5	5.8E-05	1.7E-01
Tetrachloroethylene	127-18-4	4.8E-07	2.1E+01
Thiourea	62-56-6	5.5E-04	1.8E-02
1,1,2-Trichloroethane	79-00-5	1.6E-05	6.3E-01
Trichloroethylene	79-01-6	1.3E-06	7.7E+00
2,4,6-Trichlorophenol	88-06-2	5.7E-06	1.8E+00
Toxaphene	8001-35-2	3.2E-04	3.1E-02
Vinyl Chloride	75-01-4	7.1E-06	1.4E+00

APPENDIX XXI

Stack Plume Rise:
[Estimated Plume Rise (In Meters) Based on Stack Exit Flow Rate and Gas Temperature]

	Exhaust Temperature (K°)										
Flow Rate (m^3/s)	<325	325-349	350-399	400-449	450-499	500-599	600-699	700-799	800-999	1000-1499	>1499
<0.5	0	0	0	0	0	0	0	0	0	0	0
0.5-0.9	0	0	0	0	0	0	0	0	1	1	1
1.0-1.9	0	0	0	0	1	1	2	3	3	3	4
2.0-2.9	0	0	1	3	4	4	6	6	7	8	9
3.0-3.9	0	1	2	5	6	7	9	10	11	12	13
4.0-4.9	1	2	4	6	8	10	12	13	14	15	17
5.0-7.4	2	3	5	8	10	12	14	16	17	19	21
7.5-9.9	3	5	8	12	15	17	20	22	22	23	24
10.0-12.4	4	6	10	15	19	21	23	24	25	26	27
12.5-14.9	4	7	12	18	22	23	25	26	27	28	29
15.0-19.9	5	8	13	20	23	24	26	27	28	29	31
20.0-24.9	6	10	17	23	25	27	29	30	31	32	34
25.0-29.9	7	12	20	25	27	29	31	32	33	35	36
30.0-34.9	8	14	22	26	29	31	33	35	36	37	39
35.0-39.9	9	16	23	28	30	32	35	36	37	39	41
40.0-49.9	10	17	24	29	32	34	36	38	39	41	42
50.0-59.9	12	21	26	31	34	36	39	41	42	44	46
60.0-69.9	14	22	27	33	36	39	42	43	45	47	49
70.0-79.9	16	23	29	35	38	41	44	46	47	49	51
80.0-89.9	17	25	30	36	40	42	46	48	49	51	54
90.0-99.9	19	26	31	38	42	44	48	50	51	53	56
100.0-119.9	21	26	32	39	43	46	49	52	53	55	58
120.0-139.9	22	28	35	42	46	49	52	55	56	59	61
140.0-159.9	23	30	36	44	48	51	55	58	59	62	65
160.0-179.9	25	31	38	46	50	54	58	60	62	65	67
180.0-199.9	26	32	40	48	52	56	60	63	65	67	70
>199.9	26	33	41	49	54	58	62	65	67	69	73

APPENDIX XXII

Health-Based Limits for Exclusion of Waste-Derived Residues*
Metals-TCLP Extract Concentration Limits:

Constituent	CAS No.	Concentration Limits (mg/l)
Antimony	7440-36-0	1xE+00
Arsenic	7440-38-2	5xE+00
Barium	7440-39-3	1xE+02
Beryllium	7440-41-7	7XE-03
Cadmium	7440-43-9	1xE+00
Chromium	7440-47-3	5xE+00
Lead	7439-92-1	5xE+00
Mercury	7439-97-6	2xE-01
Nickel	7440-02-0	7xE+01
Selenium	7782-49-2	1xE+00
Silver	7440-22-4	5xE+00
Thallium	7440-28-0	7xE+00

Nonmetals-Residue Concentration Limits:

Constituent	CAS No.	Concentration Limits for Residues (mg/l)
Acetonitrile	75-05-8	2xE-01
Acetophenone	98-86-2	4xE+00
Acrolein	107-02-08	5xE-01
Acrylamide	79-06-1	2xE-04
Acrylonitrile	107-13-1	7xE-04
Aldrin	309-00-2	2xE-05
Allyl alcohol	107-18-6	2xE-01
Aluminum phosphide	20859-73-8	1xE-02
Aniline	62-53-3	6xE-02
Barium cyanide	542-62-1	1xE+00
Benz(a)anthracene	56-55-3	1xE-04
Benzene	71-43-2	5xE-03
Benzidine	92-87-5	1xE-06
Bis(2-chloroethyl) ether	111-44-4	3xE-04
Bis(chloromethyl) ether	542-88-1	2xE-06
Bis(2-ethylhexyl) phthalate	117-81-7	3xE+01
Bromoform	75-25-2	7xE-01
Calcium cyanide	592-01-8	1xE-06
Carbon disulfide	75-15-0	4xE+00
Carbon tetrachloride	56-23-5	5xE-03
Chlordane	57-74-9	3xE-04
Chlorobenzene	108-90-7	1xE+00
Chloroform	67-66-3	6xE-02
Copper cyanide	544-92-3	2xE-01
Cresols (Cresylic acid)	1319-77-3	2xE+00
Cyanogen	460-19-5	1xE+00
DDT	50-29-3	1xE-03

Constituent	CAS No.	Concentration Limits for Residues (mg/l)
Dibenz(a,h)-anthracene	53-70-3	7xE-06
1,2-Dibromo-3-chloropropane	96-12-8	2xE-05
p-Dichlorobenzene	106-46-7	7.5xE-02
Dichlorodifluoromethane	75-71-8	7xE+00
1,1-Dichloroethylene	75-35-4	5xE-03
2,4-Dichlorophenol	120-83-2	1xE-01
1,3-Dichloropropene	542-75-6	1xE-03
Dieldrin	60-57-1	2xE-05
Diethyl phthalate	84-66-2	3xE+01
Diethylstilbesterol	56-53-1	7xE-07
Dimethoate	60-51-5	3xE-02
2,4-Dinitrotoluene	121-14-2	5xE-04
Diphenylamine	122-39-4	9xE-01
1,2-Diphenylhydrazine	122-66-7	5xE-04
Endosulfan	115-29-7	2xE-03
Endrin	72-20-8	2xE-04
Epichlorohydrin	106-89-8	4xE-02
Ethylene dibromide	106-93-4	4xE-07
Ethylene oxide	75-21-8	3xE-04
Fluorine	7782-41-4	4xE+00
Formic acid	64-18-6	7xE+01
Heptachlor	76-44-8	8xE-05
Heptachlor epoxide	1024-57-3	4xE-05
Hexachlorobenzene	118-74-1	2xE-04
Hexachlorobutadiene	87-68-3	5xE-03
Hexachlorocyclopentadiene	77-47-4	2xE-01
Hexachlorodibenzo-p-dioxins	19408-74-3	6xE-08

Constituent	CAS No.	Concentration Limits for Residues (mg/l)
Hexachloroethane	67-72-1	3xE-02
Hydrazine	302-01-1	1xE-04
Hydrogen cyanide	74-90-8	7xE-05
Hydrogen sulfide	7783-06-4	1xE-06
Isobutyl alcohol	78-83-1	1xE+01
Methomyl	16752-77-5	1xE+00
Methoxychlor	72-43-5	1xE-01
3-Methylcholanthrene	56-49-5	4xE-05
4,4'-Methylenebis (2-chloroaniline)	101-14-4	2xE-03
Methylene chloride	75-09-2	5xE-02
Methyl ethyl ketone (MEK)	78-93-3	2xE+00
Methyl hydrazine	60-34-4	3xE-04
Methyl parathion	298-00-0	2xE-02
Naphthalene	91-20-3	1xE+01
Nickel cyanide	557-19-7	7xE-01
Nitric oxide	10102-43-9	4xE+00
Nitrobenzene	98-95-3	2xE-02
N-Nitrosodi-n-butyl amine	924-16-3	6xE-05
N-Nitrosodiethylamine	55-18-5	2xE-06
N-Nitroso-N-methyl urea	684-93-5	1xE-07
N-Nitrosopyrrolidine	930-55-2	2xE-04
Pentachlorobenzene	608-93-5	3xE-02
Pentachloronitrobenzene (PCNB)	82-68-8	1xE-01
Pentachlorophenol	87-86-5	1xE+00
Phenol	108-95-2	1xE+00
Phenylmercury acetate	62-38-4	3xE-03
Phosphine	7803-51-2	1xE-02

Constituent	CAS No.	Concentration Limits for Residues (mg/l)
Polychlorinated biphenyls, N.O.S.	1336-36-3	5xE-05
Potassium cyanide	151-50-8	2xE+00
Potassium silver cyanide	506-61-6	7xE+00
Pronamide	23950-58-5	3xE+00
Pyridine	110-86-1	4xE-02
Reserpine	50-55-5	3xE-05
Selenourea	630-10-4	2xE-01
Silver cyanide	506-64-9	4xE+00
Sodium cyanide	143-33-9	1xE+00
Strychnine	57-24-9	1xE-02
1,2,4,5-Tetrachloro benzene	95-94-3	1xE-02
1,1,2,2-tetrachloroe thane	79-34-5	2xE-03
Tetrachloroethylene	127-18-4	7xE-01
2,3,4,6-Tetrachloro phenol	58-90-2	1xE-02
Tetraethyl lead	78-00-2	4xE-06
Thiourea	62-56-6	2xE-04
Toluene	108-88-3	1xE+01
Toxaphene	8001-35-2	5xE-03
1,1,2-Trichloroetha ne	79-00-5	6xE-03
Trichloroethylene	79-01-6	5xE-03
Trichloromonofluor omethane	75-69-4	1xE+01
2,4,5-Trichlorophen ol	95-95-4	4xE+00
2,4,6-Trichlorophen ol	88-06-2	4xE+00
Vanadium pentoxide	1314-62-1	7xE-01
Vinyl chloride	75-01-4	2xE-03

*Note 1: The health-based concentration limits for appendix V of chapter 33-24-02 constituents for which a health-based concentration is not provided below is 2xE-06 mg/kg.

Note 2: The levels specified in this appendix and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of this appendix are administratively stayed under the condition, for those constituents specified in subdivision a of subsection 2 of section 33-24-05-537, that the owner or operator complies with the alternative levels defined as the land disposal restriction limits specified in section 33-24-05-283 for F039 nonwastewaters. See paragraph 1 of subdivision b of subsection 2 of section 33-24-05-537.

APPENDIX XXIII

Organic Compounds for Which Residues Must Be Analyzed

Volatiles:	Semivolatiles:
Benzene	Bis(2-ethylhexyl)phthalate
Toluene	Naphthalene
Carbon tetrachloride	Phenol
Chloroform	Diethyl phthalate
Methylene chloride	Butyl benzyl phthalate
Trichloroethylene	2,4-Dimethylphenol
Tetrachloroethylene	o-Dichlorobenzene
1,1,1-Trichloroethane	m-Dichlorobenzene
Chlorobenzene	p-Dichlorobenzene
cis-1,4-Dichloro-2-butene	Hexachlorobenzene
Bromochloromethane	2,4,6-Trichlorophenol
Bromodichloromethane	Fluoranthene
Bromoform	o-Nitrophenol
Bromomethane	1,2,4-Trichlorobenzene
Methylene bromide	o-Chlorophenol
Methyl ethyl ketone	Pentachlorophenol
	Pyrene
	Dimethyl phthalate
	Mononitrobenzene
	2,6-Toluene diisocyanate
	Polychlorinated dibenzo-p-dioxins[1]
	Polychlorinated dibenzo-furans[1]

[1]Analyses for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans are required only for residues collected from areas downstream of the combustion chamber (for example, ductwork, boiler tubes, heat exchange surfaces, and air pollution control devices).

Note to the table: Analysis is not required for those compounds that do not have an established F039 nonwastewater concentration limit.

APPENDIX XXIV

Methods Manual for Compliance With the Boiler and Industrial Furnace Regulations

The Methods Manual for Compliance With the Boiler and Industrial Furnace Regulations* is incorporated by reference in its entirety from Appendix IX to 40 Code of Federal Regulations, Part 266, effective April 17, 2015.

APPENDIX XXV

[Reserved]

APPENDIX XXVI

Lead-Bearing Materials That May Be Processed in Exempt Lead Smelters

A.	Exempt Lead-Bearing Materials When Generated or Originally Produced by Lead-Associated Industries[1]
1.	Acid dump/fill solids
2.	Sump mud
3.	Materials from laboratory analyses
4.	Acid filters
5.	Baghouse bags
6.	Clothing (for example, coveralls, aprons, shoes, hats, gloves)
7.	Sweepings
8.	Air filter bags and cartridges
9.	Respiratory cartridge filters
10.	Shop abrasives
11.	Stacking boards
12.	Waste shipping containers (for example, cartons, bags, drums, cardboard)
13.	Paper hand towels
14.	Wiping rags and sponges
15.	Contaminated pallets
16.	Water treatment sludges, filter cakes, residues, and solids
17.	Emission control dusts, sludges, filter cakes, residues, and solids from lead-associated industries (for example, K069 and D008 wastes)
18.	Spent grids, posts, and separators
19.	Spent batteries
20.	Lead oxide and lead oxide residues
21.	Lead plates and groups
22.	Spent battery cases, covers, and vents
23.	Pasting belts
24.	Water filter media
25.	Cheesecloth from pasting rollers
26.	Pasting additive bags
27.	Asphalt paving materials

[1]Lead-associated industries are lead smelters, lead-acid battery manufacturing, and lead chemical manufacturing (for example, manufacturing of lead oxide or other lead compounds).

B.	Exempt Lead-Bearing Materials When Generated or Originally Produced by Any Industry
1.	Charging jumpers and clips
2.	Platen abrasive

3. Fluff from lead wire and cable casings
4. Lead-based pigments and compounding pigment dust

APPENDIX XXVII

Nickel or Chromium-Bearing Materials That May Be Processed in Exempt Nickel-Chromium Recovery Furnaces

A. Exempt Nickel or Chromium-Bearing Materials when Generated by Manufacturers or Users of Nickel, Chromium, or Iron

1.	Baghouse bags
2.	Raney nickel catalyst
3.	Floor sweepings
4.	Air filters
5.	Electroplating bath filters
6.	Wastewater filter media
7.	Wood pallets
8.	Disposable clothing (coveralls, aprons, hats, and gloves)
9.	Laboratory samples and spent chemicals
10.	Shipping containers and plastic liners from containers or vehicles used to transport nickel or chromium-containing wastes
11.	Respirator cartridge filters
12.	Paper hand towels

B. Exempt Nickel or Chromium-Bearing Materials When Generated by Any Industry

1.	Electroplating wastewater treatment sludges (F006)
2.	Nickel and/or chromium-containing solutions
3.	Nickel, chromium, and iron catalysts
4.	Nickel-cadmium and nickel-iron batteries
5.	Filter cake from wet scrubber system water treatment plants in the specialty steel industry
6.	Filter cake from nickel-chromium alloy pickling operations

APPENDIX XXVIII

Mercury-Bearing Wastes That May Be Processed in Exempt Mercury Recovery Units

These are exempt mercury-bearing materials with less than five hundred parts per million of appendix V of chapter 33-24-02 organic constituents when generated by manufacturers or users of mercury or mercury products.

1. Activated carbon.
2. Decomposer graphite.
3. Wood.
4. Paper.
5. Protective clothing.
6. Sweepings.
7. Respiratory cartridge filters.
8. Cleanup articles.
9. Plastic bags and other contaminated containers.
10. Laboratory and process control samples.
11. K106 and other wastewater treatment plant sludge and filter cake.
12. Mercury cell sump and tank sludge.
13. Mercury cell process solids.
14. Recoverable levels of mercury contained in soil.

APPENDIX XXIX

Metal-Bearing Wastes Prohibited From Dilution in a Combustion Unit According to Subsection 3 of Section 33-24-05-252[1]

Waste Code	Waste Description
D004	Toxicity Characteristic for Arsenic.
D005	Toxicity Characteristic for Barium.
D006	Toxicity Characteristic for Cadmium.
D007	Toxicity Characteristic for Chromium.
D008	Toxicity Characteristic for Lead.
D009	Toxicity Characteristic for Mercury.
D010	Toxicity Characteristic for Selenium.
D011	Toxicity Characteristic for Silver.
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.
F007	Spent cyanide plating bath solutions from electroplating operations.
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.
F010	Quenching bath residues from oil baths from metal treating operations where cyanides are used in the process.
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum car washing when such phosphating is an exclusive conversion coating process.
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003	Wastewater treatment sludge from the production of molybdate orange pigments.
K004	Wastewater treatment sludge from the production of zinc yellow pigments.
K005	Wastewater treatment sludge from the production of chrome green pigments.
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007	Wastewater treatment sludge from the production of iron blue pigments.
K008	Oven residue from the production of chrome oxide green pigments.
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.

Waste Code	Waste Description
K069	Emission control dust/sludge from secondary lead smelting.
K071	Brine purification muds from the mercury cell processes in chlorine production, where separately prepurified brine is not used.
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.
K106	Sludges from the mercury cell processes for making chlorine.
P010	Arsenic acid H_3AsO_4
P011	Arsenic oxide As_2O_5
P012	Arsenic trioxide
P013	Barium cyanide
P015	Beryllium
P029	Copper cyanide Cu(CN)
P074	Nickel cyanide $Ni(CN)_2$
P087	Osmium tetroxide
P099	Potassium silver cyanide
P104	Silver cyanide
P113	Thallic oxide
P114	Thallium (I) selenite
P115	Thallium (I) sulfate
P119	Ammonium vanadate
P120	Vanadium oxide V_2O_5
P121	Zinc cyanide
U032	Calcium chromate
U145	Lead phosphate
U151	Mercury
U204	Selenious acid
U205	Selenium disulfide
U216	Thallium (I) chloride
U217	Thallium (I) nitrate

[1]A combustion unit is defined as any thermal technology subject to sections 33-24-05-144 through 33-24-05-159 or sections 33-24-05-525 through 33-24-05-549.